INSIDE: "RECREATION" ACCESS SITES?

Montana Outdoors

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MARCH–APRIL 2019

THE RECOVERING AMERICA'S WILDLIFE ACT

How a bipartisan bill could save the nation's at-risk species

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PIEROGIES AT HOME
STATE PARKS' PAINED SMILE
THEY HELPED SAVE MONTANA
PETER PARKER'S STICKY INSPIRATION

Montana Outdoors

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HOW DO THEY DO IT? Spiders produce non-sticky threads to make the outer rim of orb webs, then use their stickiest silk in the insect-catching interior. Learn more about "amazing" spider silk on page 37. Stock photo by Hector Ruiz Villar.

FRONT COVER See page 10 to learn how landmark legislation making its way through Congress could help trumpeter swans and other imperiled wildlife in Montana and across the United States. Photo by Jason Savage.

Montana Outdoors

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LETTERS

Reassured

We very much enjoyed your article "Where Are the Wolverines?" (November-December 2018). Several summers ago, we were lucky enough to observe one rolling around on a snowfield near Logan Pass in Glacier National Park. It's reassuring to know from the article that biologists in many states are working together to find out where these amazing creatures live and what needs to be done to protect those wild places.

Bethany and Mitchell Wilson
Spokane, WA

Vandals are vandals

I recently read your short article titled "How jerks ruin hunter access" ("Outdoors Report," November-December 2018). While I agree that some hunters are jerks, people who shoot up signs are not hunters; they are vandals. Most hunters are very respectful of other people's property. Please do not paint us all with the same brush.

Gerald Hurst
Marion, MT

Offended

Sometimes when people try to send an important message, it can sound like they want to poke a finger in your eye. Case in point: the bullet-ridden sign in the photo with the article "How jerks ruin hunter access." The sign reads, "Private Property. No Fishing, Shooting, Hiking. Trespassers Off the Road Will Be Prosecuted." A better way for that landowner to get the message across without offending anyone might be to reword the sign to simply say, "Private Property. No Public Access Allowed. Thank You."

John Sandy
Northport, AL

Permits are not licenses

The article on Montana's unlimited sheep districts ("Outdoors Report," September-October) uses both the terms "permits" and "licenses." I thought permits were just for deer and elk.

Dale Reynolds
Billings

Ray Mulé, recently retired FWP regional wildlife manager in Billings, replies: Mr. Reynolds is correct. There is no such thing as a bighorn sheep permit. The items referred to in the article are licenses. The only FWP permits that exist are for elk and mule deer. A permit must be used in conjunction with a valid license. A license is a stand-alone item that may also function as a possession tag. All tags are licenses, but not all licenses are tags (such as fishing licenses, upland game bird licenses, etc.). The distinction between licenses and permits is important because we don't want someone to attach a "permit" to their harvested bighorn sheep or other big game animal. That would be a game law violation if they didn't also have the license (tag) attached.

> **People who shoot up signs are not hunters; they are vandals.**

Fan mail from all over

There's so much to admire about the November-December issue that I just had to write and say thank you. I've been a loyal subscriber for years. I've always found your magazine to be nothing less than well researched, well written, well photographed, personal yet professional, beautiful, and poignant. *Montana Outdoors* speaks volumes about FWP's commitment to important, accountable, and results-oriented public service.

John Holbrook
Missoula

I have an international family with members in the United Kingdom and the Netherlands. Most have visited me in Montana. They have all remarked on the size of Montana, its beauty, and the friendliness of Montanans. We who live here are so lucky. Montana is truly blessed, and your magazine proves that.

Steve Smith
Billings

Wow! Your 38th annual photo issue is probably the single greatest issue of any magazine I have ever looked at (and I look at a lot of nature magazines). The photos are stunning. Feel free to make the 39th annual photo issue twice as long.

Craig Grube
Virginia Beach, VA

My wife and I are avid fly-anglers and frequent visitors to Montana. Your magazine is A-1. Keep up the great work.

Jim Brown
Germantown, WI

We live in Georgia, but our extended family is in Missoula. Our little girl, Charlotte, was particularly taken with your 2019 photo issue, especially the animals and flowers. We always look forward to our new issue.

Laura Gollin
Atlanta, GA

Corrections

In "Where Are the Wolverines?" we incorrectly noted that a multi-state survey detected wolverines in Wyoming's southern Wind River Range for the first time. In fact it was the first time that both a male and a female wolverine—indicating the possibility of a breeding pair—had been detected. Also, the opening photo in the article "Better Fishing Tomorrow" (November-December) did not show the Brewery Flats stretch of Big Spring Creek, southeast of Lewistown, but a reach of the stream that's north of town.

Speak your mind

We welcome all your comments, questions, and letters to the editor. We'll edit letters as needed for accuracy, style, and length. Write to us at Montana Outdoors, P.O. Box 200701, Helena, MT 59620-0701. Or e-mail us at: tdickson@mt.gov

Game Bird and Wild Mushroom Pierogies

By Tom Healy | Preparation time: 30 minutes | Cooking time: 20 minutes | Serves 4-5

SHUTTERSTOCK

Pierogies are traditional dumplings of Central European and Baltic origin made by wrapping egg dough around a savory or sweet filling and then boiling or pan-frying (or both) the little parcels. Commonly filled with potatoes, cabbage, ground or cubed meat, cheese, or fruit, pierogies are as delicious to eat as they are fun to prepare. My favorites include pierogies stuffed with venison sausage and herbs, then added to any wild rice soup; pierogies served with crème fraîche and wild onion marmalade; pierogies stuffed with ground venison and cheese and fried in butter (fit for a proper dunking in ketchup); and miniature pastries filled with huckleberries and cream cheese, deep fried and served with ice cream.

As a longtime upland bird hunter and fungus stalker, I've made these Game Bird and Wild Mushroom Pierogies a staple on our household menu. I search for mushrooms in northwestern Montana and hunt for Huns and sharptails in the state's northeastern grasslands. The combination of game birds with wild morel, chanterelle, or shaggy mane mushrooms is delicious. Mountain grouse and pheasants also work fine, as does chicken.

The dough recipe results in durable, "cakey" dumplings when boiled, and tender, flaky parcels when browned.

Tip: Don't waste the dough scraps. They can be combined and rolled again, then stuffed with the bird and mushroom filling, or saved in the refrigerator and stuffed with leftover elk stew (drained), wild raspberry preserves, Nutella and bananas, or other sweet or savory ingredients and then boiled or fried.

—Tom Healy is a timber frame house builder and instructor, and a board member of Montana Backcountry Hunters and Anglers. He lives in Wisdom.

INGREDIENTS

1 c. flour (all purpose or pastry)
¼ t. salt
1 egg, yolk and white divided
¼ c. sour cream or crème fraîche
2 T. butter (softened) or vegetable oil
2 T. water

Add all ingredients except egg white to a medium bowl, mix until combined, then knead into a uniform ball. Wrap tightly in plastic wrap and refrigerate for at least 20 minutes (or up to three days). Let dough return to room temperature before rolling out.

FILLING

8 oz. upland game bird meat or chicken meat, cut into ¼-inch cubes
2 T. butter
½ c. mushrooms, cut into ¼-inch cubes
¼ c. minced shallot or onion
1 clove garlic, crushed or minced
2 T. white wine

DIRECTIONS

Over medium heat, melt 1 T. butter in a sauté pan and cook the mushrooms, shallot, and garlic for 6 minutes. Add a pinch each of salt and pepper. Add meat and cook 2 minutes. Add wine and stir up the brown bits (fond) from the pan bottom. Reduce the liquid by half. Remove from heat and set aside.

In a large pot, set water to boil. Roll out the dough to ⅛-inch thickness. Using a cup or glass, make 16 to 20 circles, each 3 inches in diameter. Beat egg white with a fork. Brush edges of three discs at a time with egg white, then add scant 1 T. of filling. Fold discs in half and seal with fork tines or fingers. Set aside.

Add the pierogies, 6-7 at a time, to boiling water. Poach 5-6 minutes, then place in a colander for 30 seconds to drain. Pat dry.

Over medium heat, heat 1 T. butter in a non-stick or well-seasoned cast iron pan. Fry 6-7 pierogies at a time, flipping them after 2 minutes until both sides are golden brown. Set on paper towels and pat dry. Spinkle with salt and serve with shredded parmesan cheese and crème fraîche or sour cream.

How we unite

In my last "Our Point of View" column (November-December 2018), I wrote about how Montana Fish, Wildlife & Parks exists to protect the integrity of the Montana outdoor experience—camping, hunting, hiking, fishing, mountain biking, backpacking, boating, and other nature-based recreation. I explained that, at FWP, the word "integrity" encompasses healthy habitat, sound science, and the personal honor and professionalism of the biologists, state park crews, game wardens, and those behind the scenes who help manage and conserve the state's fish, wildlife, and state parks.

Now I want to explain how and why FWP unites people outside the agency to help us do that work.

Projects such as conservation easements and stream restorations bring together citizens, business and community leaders, and others to help FWP protect vital fish and wildlife habitat. Shown here working on the Haskill Basin Conservation Easement are (left to right) Whitefish mayor John Muhlfeld, F.H. Stoltz Land & Lumber Company vice president and general manager Chuck Roady, and FWP wildlife habitat biologist Alan Wood.

Montana is a big state with extensive wildlife habitat, trails, fishing waters, and state parks. FWP can't manage all those resources on its own. We need help—from landowners, communities, conservation groups, businesses, and individuals.

FWP brings people together to discuss, debate, fund, and learn about outdoor resources and experiences. We hold inclusive processes like season-setting meetings where people can gather, ask questions, and state their opinions. We conduct public surveys, where we ask people what they think about elk population levels, grizzly conflicts, walleye management, and other issues, then combine that input to help guide our work.

We bring people together through our hunter, bowhunter, fishing, grizzly awareness, and Becoming an Outdoors-Woman education programs. Across Montana, we've built a "community of knowledge" through public information and outreach work, such as press releases, "FWP Outdoor Report" TV episodes, the FWP website, and *Montana Outdoors*.

Through FWP programs like Habitat Montana and Future Fisheries, landowners, conservation groups, and communities come together to work with us and other public agencies to reinvigorate grasslands, acquire and enhance critical forest habitat, improve trout streams, and keep working ranches and farms intact.

When people pay camping fees at state parks or the surcharge on their light vehicle registration renewals, they're collectively helping fund Montana's state parks system. When they buy hunting, fishing, and trapping licenses, they join together in supporting management and conservation of fish and wildlife populations and habitat.

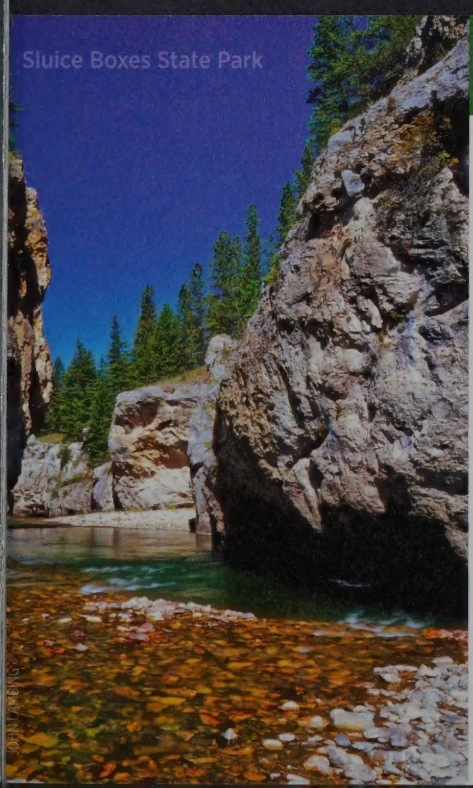
Many people who love Montana's outdoors—both residents and visitors—don't hunt or fish. But they still want to be part of the state's conservation community and contribute to protecting the Montana outdoor experience. FWP is working with conservation groups to find additional ways for people to help fund fish and wildlife management, especially work that conserves nongame species and reduces conflicts between people and large carnivores.

The people who FWP brings together to protect the integrity of Montana's outdoors often hold widely divergent views. We respect that. But again and again we find that those who care about Montana's natural world share deeply held values: healthy habitat, clean water, abundant wildlife, and ample outdoor recreation opportunities.

Montanans have always stood side by side to maintain the state's high quality of life, based on a healthy, economically sustainable, and accessible natural environment. At FWP, we're proud to bring people together to help us preserve this outdoors-based lifestyle, one that most people in this country can only dream of living.

—**Martha Williams**, Director, Montana Fish, Wildlife & Parks

JEREMIE HOLLMAN



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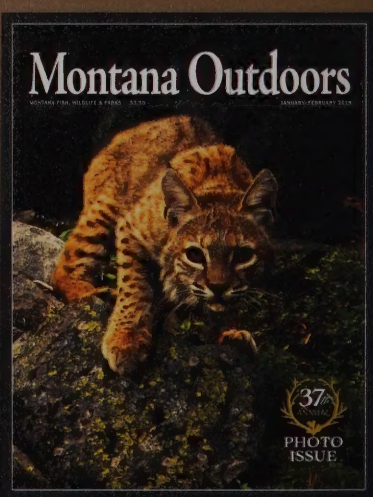

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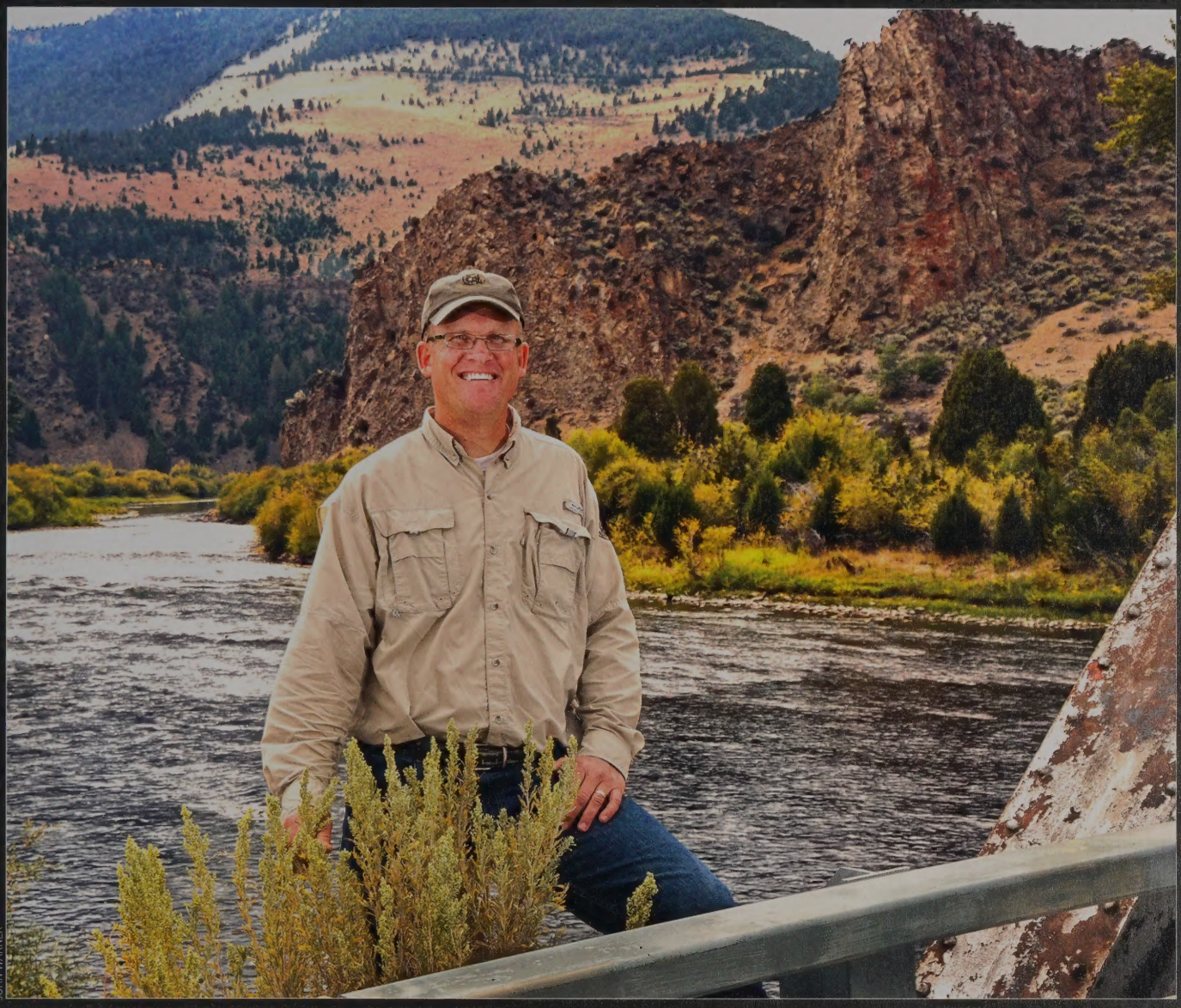


JOHN WARNER

MANDATE BALANCER

JIM OLSEN
Fisheries Biologist, Butte

EVEN AFTER DOING IT FOR 11 YEARS, I still can't believe I get to manage the famous Big Hole River (shown here in Maiden Rock Canyon). One of the biggest challenges I face managing the fisheries in this region is explaining to anglers why, in stretches of some Big Hole tributaries and other streams, we need to remove all the nonnative brook trout to restore native westslope cutthroat trout. Brookies are great sport fish, but they outcompete the cutthroat. I sympathize with anglers who like to catch brookies—I do, too—but FWP has a legislative mandate to make sure westslope cutthroat don't wink out and end up on the endangered species list. The only way to do that is to remove nonnatives in some waters. Saving the westslope cutthroat from disappearing is also ethically the right thing to do, especially when we have the tools to make it happen.

FWP fisheries biologists have dual mandates to ensure top-notch fishing recreation and protect Montana's natural heritage. Our goal is to eventually manage 80 percent of the streams across the Upper Missouri River Basin for browns, rainbows, and brookies, while managing 20 percent for native westslope cutthroat and, where possible, Arctic grayling. That seems to be a fair and appropriate balance.

Photographer **Brett Swain**, who lives west of Kalispell in Marion, visits Glacier National Park year round. During a multiday trip to the Many Glacier area, he regularly spotted this snowshoe hare just off a hiking trail. "It would frequently take shelter under that ledge to escape the snow," Swain says. "It was at about eye level, 30 yards away, when I took this shot. I put it off center in the frame and included the vegetation in the lower left-hand corner, as well as that bright-green moss above. I also wanted to capture the falling snowflakes to the right, plus the residual snow in the rocks."

13

Annual number of page views, in millions, of the FWP website

Donate FAS photos, maybe win a T-shirt

FWP's FishMT web application provides information on Montana's fisheries for anglers, teachers, scientists, and others. This user-friendly app, found on the FWP website, includes stocking rates, fishing pressure, fish distribution, research findings, and more.

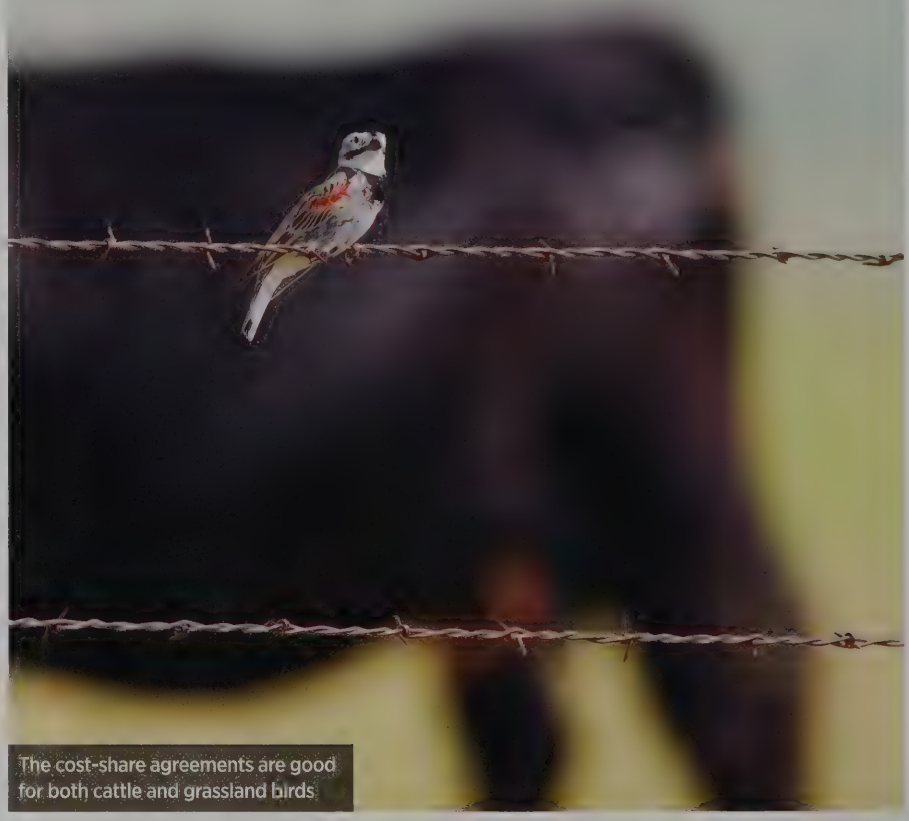
To improve the app, FWP needs photographs of fishing access sites and reservoirs to show users what these areas look like.

Please submit photos via Instagram at #FISHMT, making sure each submission includes the name of the water body or access site (such as #FRESNO or #CRAIG). Donors' names will be entered into a drawing for a free "Montana Native Fish" T-shirt.

An FWP intern created a short video to publicize the FishMT app and solicit photographs. Check it out here: http://bit.ly/FWPFishMT.

WILDLIFE HABITAT

Get reimbursed for conserving grasslands



The cost-share agreements are good for both cattle and grassland birds

FWP is providing financial help to qualifying landowners interested in transitioning their mediocre cropland or expiring Conservation Reserve Program (CRP) lands to rangeland. The department also offers 30-year conservation easement leases to landowners who want to conserve native grasslands and shrublands on working ranches.

"These cost-share and conservation lease opportunities help keep grass on the landscape as habitat for prairie songbirds and other wildlife, while at the same time benefiting ranchers and rural communities," says Catherine Wightman, who coordinates the department's Working Grasslands Initiative.

In cost-share agreements, Wightman says, qualifying landowners enter into voluntary 10- to 20-year contracts. FWP pays up to 75 percent of the costs for fencing, stock tanks, water pipelines, seeding, and other practices necessary to manage the lands as productive rangeland. For their part, landowners agree not to drain wetlands or plant crops or other non-native vegetation.

With conservation leases, landowners receive a one-time payment of $30 per enrolled acre. In return, they agree not to drain wetlands or plow, burn, or otherwise remove existing native grassland, sagebrush, or other native vegetation for 30 years.

Under both arrangements, landowners also agree to provide public access to hunters and wildlife watchers.

FWP gives top priority to lands managed with rest-rotation grazing and that contain native prairie and shrubland vegetation.

To learn more about eligibility and other initiative details, contact Wightman at (406) 444-3377, cwightman@mt.gov. ■

OUTDOOR EDUCATION

Generous donation enhances avian education

Budding birders received a surprise gift this past holiday season. The Jean Smith Estate made a donation to FWP to outfit 25 bird watching trunks across the state.

Each trunk contains 20 quality binoculars, *Sibley Birds West* guidebooks, and lesson plans to help educators organize outings.

Smith, who died in 2015 at age 83, was an ornithology professor at Carroll College in Helena who enjoyed hiking, fishing, hunting, and bird watching. "She just loved birds, and wanted to introduce new people to birding," says Laurie Wolf, FWP's Education Program manager.

FWP invites teachers and youth group leaders to borrow the trunks for bird-education trips. The trunks are available at FWP offices, the department's Montana WILD education center in Helena, and these state parks: Bannack, Travelers' Rest, Fort Owen, Painted Rocks, Chief Plenty Coups, Wayfarer, Makoshika, Lewis & Clark Caverns, Lone Pine, and Missouri Headwaters. ■

Not having to share binoculars makes bird watching more enjoyable, say outdoor educators.

CLOCKWISE FROM TOP LEFT: CARTOON BY MIKE MORAN; CRAIG & LIZ LARCOM; JOHN WARNER; THOM BRIDGE; JEFF ERICKSON

1 of 109,000

2018 watercraft inspections break record

Last year, watercraft inspections in Montana hit an all-time high. Crews at more than 40 stations made 109,000 inspections, more than double the number before invasive mussel larvae were detected in 2016. "Watercraft inspection stations are Montana's first line of defense against the introduction of aquatic invasive species," says Thomas Woolf, chief of FWP's Aquatic Invasive Species (AIS) Bureau.

FWP and partner organizations including the Blackfeet Nation, Confederated Salish and Kootenai Tribes, Garfield Conservation District, Missoula County Weed District, National Park Service, and Whitefish Lake Institute operate the stations.

Inspectors in Montana intercepted 16 out-of-state boats with invasive mussels attached. These boats came from midwestern and southwestern states, and many were passing through Montana to a final destination elsewhere. The boats were decontaminated, and follow-up inspections were scheduled at their final destinations. "Every western state and province is working on stopping the spread of AIS, and we work closely with them to ensure that boats are clean, drained, and dry when they travel through the region," Woolf says. ■

AN ACT OF FINDING COMMON GROUND

★ ★ ★ ★

Showing bipartisan cooperation, Congress advances landmark legislation that could rescue vulnerable wildlife species.

BY TOM DICKSON

Dave Chadwick shakes his head, smiling at the wonder of it all.

"A bill that proposes to spend more than a billion dollars a year, in this political environment, with more than 100 cosponsors in the House, half Republican, half Democrat, less than a year after it was introduced. There's just no way not to be impressed."

Chadwick, executive director of the Montana Wildlife Federation, is talking about the Recovering America's Wildlife Act (RAWA). The law, if passed, would redirect roughly $1.3 billion each year to state fish and wildlife agencies to conserve at-risk species and habitat, manage human-wildlife conflicts, boost conservation education, and add public outdoor recreation opportunities.

Based on a formula that considers each state's population and size, Montana would stand to receive about $30 million each year—far more than what the state currently spends to manage and conserve species at high risk of disappearing.

The bill has moved steadily through both houses of Congress over the past two years, thanks largely to broad-based grassroots advocates who have cultivated bipartisan cosponsors. RAWA supporters include such disparate entities as Bass Pro Shops/Cabela's, the National Wildlife Federation, Audubon, the National Shooting Sports Foundation, Toyota, and Richard Childress Racing. "When you see Audubon teaming up with a NASCAR group, you know something amazing is happening," Chadwick says.

One-third of America's wildlife species are considered vulnerable, and one-fifth are imperiled and at high risk of extinction.

PRESSING NEED

One-third of America's wildlife species are considered vulnerable, and one-fifth are imperiled and at high risk of extinction, according to the National Wildlife Federation's "Reversing America's Wildlife Crisis" report. If these at-risk species do not receive concerted attention, their demise will trigger costlier and more restrictive "emergency room" measures required under the Endangered Species Act.

Of Montana's nearly 700 species of mammals, fish, birds, amphibians, and reptiles, Montana Fish, Wildlife & Parks has identified 128 as "species of greatest concern." At-risk fish and wildlife include the American pika, mountain plover, long-toed salamander, northern redbelly dace, and trumpeter swan.

Reasons for conserving imperiled wildlife species mirror those for game animals. Healthy fish and wildlife populations and habitats help support Montana's robust $7 billion outdoor recreation economy. They provide reasons for people—especially screen-addicted youth—to spend time outdoors. Many nongame species, like hummingbirds and owls, represent wildness and inspire wonder. All are essential cogs in nature's complex ecological machinery that sustains clean water, healthy forests, and fertile plains.

What's more, wildlife conservation agencies are coping with increasing risks to both game and nongame populations. Threats include aquatic invasive species, habitat lost to housing and other development, West Nile virus and other diseases, climate change, and human-wildlife conflicts in urban and rural areas.

Montana has long recognized the need to manage more than just game animals. The 1973 Legislature made clear that all wildlife species are FWP's responsibility. Four decades later, a 2005 statewide survey confirmed that most Montana residents still want the department to manage both game and nongame animals.

The hurdle, however, has always been funding.

In Montana, almost no state tax revenue goes toward fish and wildlife conservation. Hunters and anglers pay for most of the work with their hunting and fishing license fees, along with federal excise taxes on hunting, fishing, and boating gear. In this user-pays, user-benefits system, game species receive almost all of the funding.

That's why FWP focuses primarily on roughly 80 game animals—elk, trout, deer, walleye, and the like—plus 17 threatened or endangered species such as the grizzly bear and pallid sturgeon that federal law requires the state to manage. The department can't afford to give many of the remaining 600-plus species much notice.

"Without reducing the attention focused on important game species, we definitely need to find a way to manage for other fish and wildlife in critical need," says Lauri Hanauska-Brown, chief of the department's Nongame Wildlife Bureau.

So far, Montana and other states haven't found a way. RAWA could be the solution.

BLUE RIBBON PANEL

Nongame wildlife advocates have long pressed for greater federal funding. In the 1990s, a coalition of 3,000 businesses and conservation groups nearly convinced Congress to provide dedicated revenue for state-based nongame conservation. The effort failed, but proponents pressed ahead.

A breakthrough came in 2014, with formation of the Blue Ribbon Panel on Sustaining America's Diverse Fish and Wildlife Resources. Chaired by Bass Pro Shops founder John Morris and former Wyoming governor Dave Freudenthal, the panel of national business and wildlife conservation leaders recommended Congress dedicate $1.3 billion, 10 percent of the roughly $13 billion the federal government receives from oil and gas well leases, to fish and wildlife restoration and conservation annually. The panel noted that game animals like white-tailed deer, rainbow trout, and wild turkeys are abundant thanks to traditional management supported by hunters and anglers. Yet many other species are neglected and in peril. "For every game species that is thriving, hundreds of nongame species are in decline," read the panel's final report.

The Blue Ribbon Panel's recommendations inspired the Recovering America's Wildlife Act, formally known as HR 4647 and sponsored by U.S. Representatives Jeff Fortenberry (R-Nebraska) and Debbie Dingell (D-Michigan). The act would dedicate federal funds for management of "greatest need" species and habitats as determined by each state.

RAWA is modeled after the dedicated funding streams created by the Pittman-Robertson (P-R) Act of 1937, for wildlife management, and the Dingell-Johnson Act (D-J) of 1950, for fisheries management. Montana and other states have used P-R and D-J dollars to recover big game populations, create sustainable sport fisheries, and protect fish and wildlife habitat. RAWA would complement this traditional hunting- and fishing-based funding. Just as nongame wildlife gain from habitat improvements for game species, game animals would benefit from habitat and research focused on new species.

RAWA is modeled after the dedicated funding streams created by the 1937 P-R Act for wildlife management and the 1950 D-J Act for fisheries management.

Though no new or additional taxes would be required to fund the bill, states would need to provide a 3-to-1 match for the funds, as with P-R and D-J money (see "The state match challenge" below).

PLAN IN PLACE

Montana already has a plan for using RAWA funding. Formulation began after 2000, when Congress authorized the Wildlife Conservation and Restoration Program (WCRP). A component of the Pittman-Robertson Act, WCRP aimed to help pay for state conservation work targeting species and habitats that need the most help. Through WCRP, Congress appropriates what are called State Wildlife Grants (SWG) to each state. To guide their

Tom Dickson is editor of Montana Outdoors.

The state match challenge

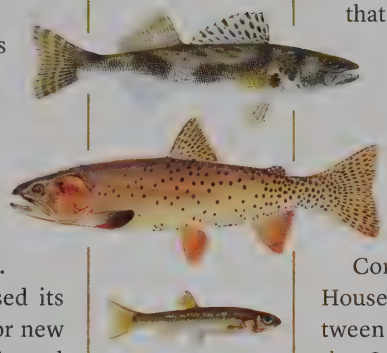
Under RAWA, Montana stands to receive up to $30 million in federal dollars for nongame wildlife conservation. But there's a catch. As with Pittman-Robertson and Dingell-Johnson funds, the new bill would require a 3-to-1 state match. To receive the $30 million, Montana would need to come up with $10 million of its own.

To figure out how, Montana conservationists formed the **Montana Wildlife Futures Group**. Representatives from Headwaters Montana, Montana Wildlife Federation, Montana Audubon, Defenders of Wildlife, Montana Trout Unlimited, Endangered Species Coalition, Greater Yellowstone Coalition, and National Wildlife Federation have assessed actions necessary to conserve Montana's nongame wildlife, with the aim of inspiring private contributions to FWP for matching RAWA funds. ■

CLOCKWISE FROM TOP LEFT SHUTTERSTOCK; FISH ILLUSTRATIONS BY JOSEPH TOMELLERI; SHUTTERSTOCK

share of federal SWG funding, each state was required to develop a comprehensive wildlife action plan. Acting as a conservation blueprint, each plan assesses the health of wildlife and habitat so that state experts know which species are in trouble. The plan then outlines steps necessary to conserve at-risk species before they become rarer and costlier to protect.

Though SWG funding has helped begin this work, it's been "grossly inadequate," according to the National Wildlife Federation. To inventory top-priority nongame species, conduct research, and protect habitats, Montana receives just $1 million per year in federal SWG funds. By comparison, the state annually gets $10 to $20 million in P-R funds for game species.



In anticipation of RAWA, Montana has used its wildlife action plan to identify priority areas for new funding. In addition to conserving fish, wildlife, and habitats, the state would use the new revenue to increase statewide nature education; provide more wildlife-based recreation opportunities like bird watching and nature photography; and better manage conflicts between people and wildlife, such as keeping grizzly bears away from livestock and providing tools to help other landowners coexist with wildlife.

BROAD SUPPORT

First, RAWA has to get through Congress. Applying steady pressure is a diverse coalition of conservation and outdoors groups, including the Congressional Sportsmen's Foundation, Association of Fish and Wildlife Agencies, and dozens of other national organizations. More than 1,000 state and local groups and businesses have endorsed the legislation.

Leading the effort in Montana are the Montana Wildlife Federation and Montana Audubon, with support from groups like the Greater Yellowstone Coalition, the Wildlife Society, Montana Trout Unlimited, and two dozen local rod-and-gun clubs and Audubon chapters.

Montana's state fish and wildlife action plan outlines steps necessary to conserve at-risk species before they become rarer and costlier to protect.

In 2018 this broad-based, grassroots support helped build momentum in Congress during a time when the nation's political system seemed paralyzed. Conservation leaders regularly met with members of Congress on both sides of the aisle to extol the benefits of preventive conservation."Members are starting to recognize that this is a once-in-a-generation opportunity to do something significant for wildlife," says Naomi Edelson, senior director of wildlife partnerships for the National Wildlife Federation. Introduced in early 2018, the House bill had 116 Republican and Democratic cosponsors by December. The Senate version, too, was strongly bipartisan.

Congress ended its session in December with the House and Senate unable to reconcile differences between their two bills. "The main difference was that the Senate bill leaves funding subject to annual appropriations, while the House bill follows recommendations of the Blue Ribbon Panel to have dedicated funding," Chadwick says.

Still, he and other conservation leaders are hopeful the 116th Congress will reach consensus in 2019. There's certainly precedent. Generations ago, both P-R and D-J passed with wide bipartisan support, as did, more recently, the Wildlife Conservation and Restoration Program. Even the 115th Congress, often painted as rigidly partisan, passed significant bipartisan legislation on criminal justice reform, opiod addiction, and water infrastructure.

"Those bills give me hope," Edelson says. "If Congress can come together on prison sentencing and drug addition, it's entirely possible to imagine them doing the same for something as American and popular as wildlife conservation."

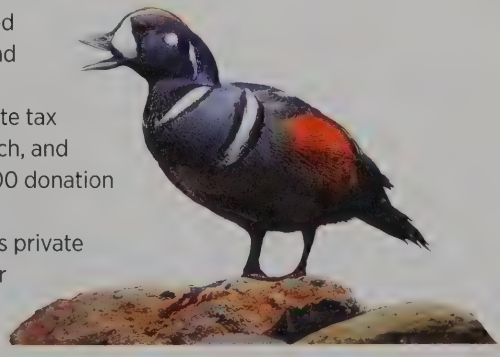
For more information on RAWA, contact the Montana Wildlife Federation at mwf@mtwf.org or visit the FWP website at fwp.mt.gov.

In the meantime...

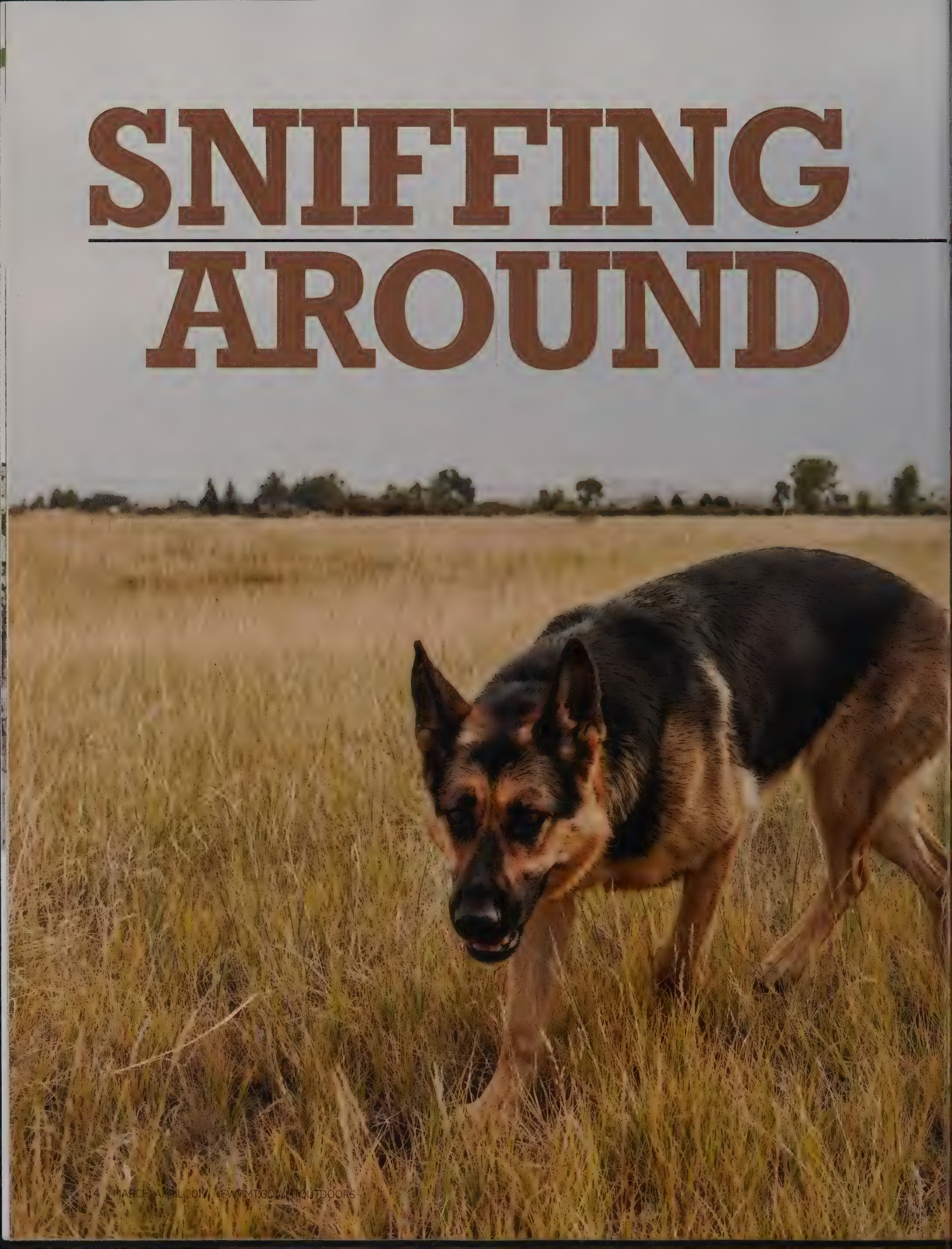
For Montana, passage of RAWA would provide nongame wildlife management with a much-needed funding boost that comes once in a generation. But what can someone do today to help restore and conserve burrowing owls, swift foxes, common loons, and other nongame species?

One option is to **donate to the Nongame Wildlife Program check-off** on your 2018 Montana state tax form. Each year Montanans donate roughly $35,000 to nongame wildlife species inventory, research, and habitat protection. Donations are often matched 3:1 from other funding, turning, for instance, a $100 donation into $400 for nongame wildlife conservation.

Another way is to **donate to the Montana's Outdoor Legacy Foundation**. The foundation directs private contributions to a variety of projects, most within FWP, that include raptor monitoring, grizzly bear and wolf management, bat conservation, harlequin duck research, wolverine conservation, and grassland enhancement. To learn more and donate, visit mtoutdoorlegacy.org.

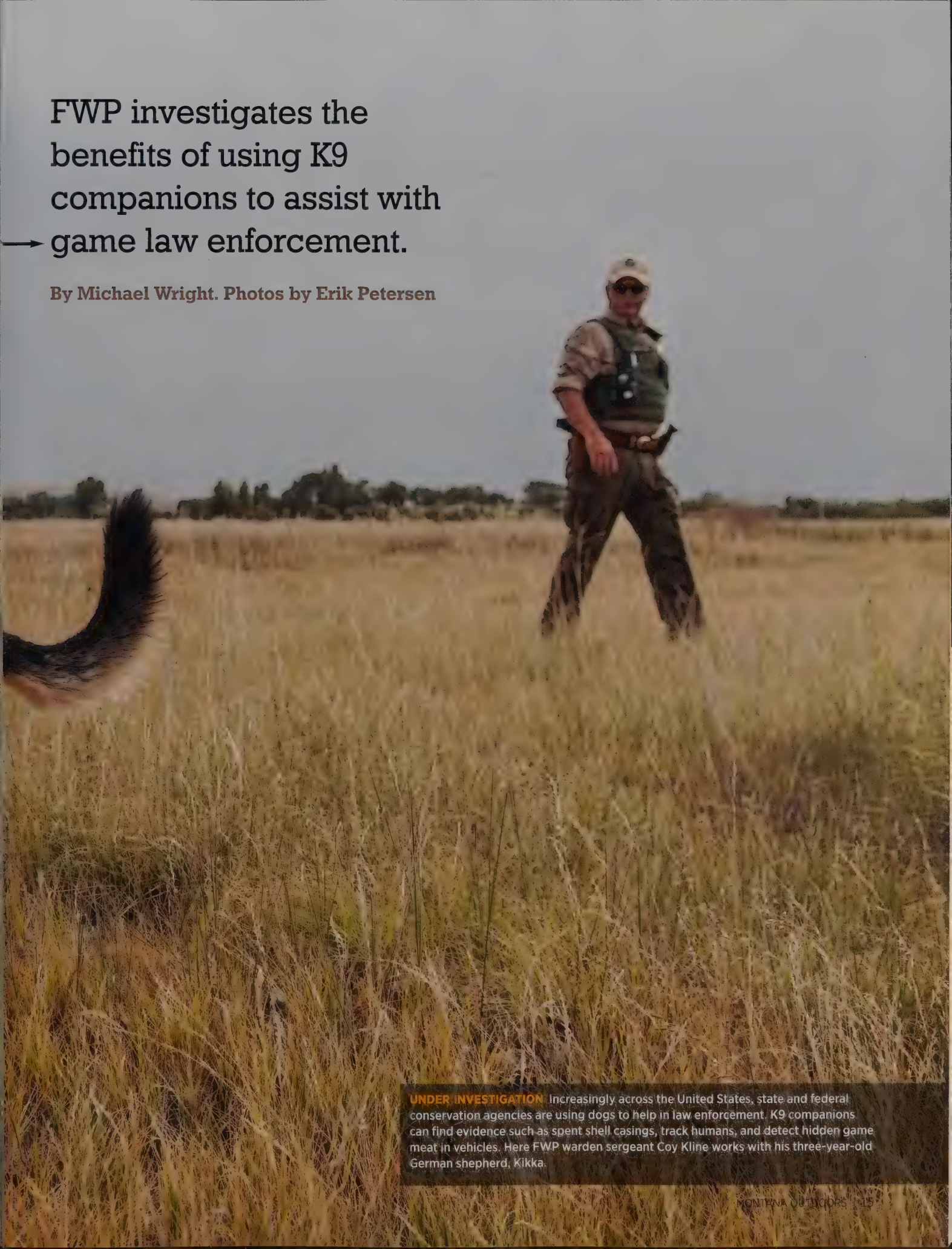


SNIFFING AROUND



FWP investigates the benefits of using K9 companions to assist with game law enforcement.

By Michael Wright. Photos by Erik Petersen



UNDER INVESTIGATION Increasingly across the United States, state and federal conservation agencies are using dogs to help in law enforcement. K9 companions can find evidence such as spent shell casings, track humans, and detect hidden game meat in vehicles. Here FWP warden sergeant Coy Kline works with his three-year-old German shepherd, Kikka.

On a recent evening at Missouri Headwaters State Park, Paul Luepke leashed his four-year-old Dutch shepherd, Oola, and walked with her to the front of his pickup. Oola, a fountain of energy, knew what was coming. Luepke stopped, unhooked the leash, and gave the command.

"Search!"

Off Oola went, running and sniffing for the smell of freshly burned gunpowder, gun oil, and human scent in the tall grass of a pasture. Luepke, a Columbus-based game warden for Montana Fish, Wildlife & Parks, had hidden a pistol in the dense vegetation. It took his K9 partner all of two minutes to find it. Oola lay down, her tongue out, in front of the firearm and looked at Luepke, both obedient and eager. She knew she'd now get her toy—a foot-long piece of sandblasting hose covered in bite marks.

"These dogs work for rewards," Luepke says, tossing the hose to Oola. "For some reason, she loves this thing."

The man-dog team practices this drill regularly. Oola must stay sharp. She too works for FWP, traveling everywhere with her human companion and sniffing out evidence to help Luepke bring lawbreakers to justice. Butte warden sergeant Coy Kline and Kikka, his three-year-old German shepherd, are the other K9 team in the FWP Enforcement Division. (Police and other law enforcement officers use "K9" as an abbreviation.)

The two teams are part of a pilot project to determine whether FWP should invest further in a canine program. Dave Loewen, FWP's law enforcement chief, says the test run will last at least two years. "Then we'll assess the dog teams' effectiveness and how much they cost," he says. "A big issue is whether the extra time it takes to train and maintain enforcement dogs is worth the time it takes away from other duties."

If FWP concludes that benefits outweigh costs, the department may request funding through the Montana Legislature for a permanent K9 program, Loewen says.

So far, the enforcement chief is encouraged by what he has seen. "The dogs definitely seem to be an asset for game law enforcement in Montana. The handlers and a lot of other wardens are excited about the potential of having more canine assistance in the future," Loewen says.

COMMON PRACTICE

Wardens in Idaho, North Dakota, Alberta, and British Columbia have been using dogs, in some cases for years, as have law enforcement staff with the U.S. Forest Service and Bureau of Land Management. FWP wardens had not experimented with dogs until about a decade ago, when Luepke started training his pet German shepherd, Axel. Luepke, who has worked for FWP for 13 years, says he started testing the dog's skills to see if he could be a working law enforcement animal. When it became clear that Axel had an aptitude for it, Luepke started bringing his dog to work. "Right away he was helping out," Luepke says.

Axel found shell casings, a hunter's headlamp, and a fellow warden's phone. The dog also found a hat with the owner's name written inside, evidence Luepke used to arrest a trespasser. In 2015, Axel died unexpectedly at age seven, while still in his prime. Luepke bought Oola and began training the Dutch shepherd, a breed similar to German shepherds and known for its trainability and intense drive and focus.

Kline brought Kikka into the enforcement business a few years ago. Kline has been with FWP for three decades, mostly as a game warden. Working with dogs was a twist he didn't see coming. "It never really entered my mind," Kline says.

He bought Kikka as a puppy, a Christmas present for his son. After learning of Luepke's success with Axel, Kline started training Kikka to find hidden objects, beginning with a dog biscuit under a box. Soon she was finding shell casings hidden in the house, and then in the field. Kikka helped FWP arrest three poachers in 2018 when she located the snow-covered shell casing of a unique caliber near Yellowstone National Park.

TEST PILOTS Columbus-based FWP game warden Paul Luepke with Oola, and Butte-based warden sergeant Coy Kline with Kikka, are part of a pilot project to see if enforcement dogs are a good investment for FWP.

Michael Wright is city editor for the Bozeman Daily Chronicle. *Erik Petersen is a freelance photographer and videographer in Clyde Park.*

CONTINUING EDUCATION Enforcement dogs must be regularly trained to learn new skills and hone existing ones. Clockwise from top: Kline unloads an eager Kikka for a training session; as a reward for finding a hidden pistol, Oola gets to play with her toy; back in the truck, she gets an ear scratch.

SNIFF OUT FISH

In addition to finding evidence, both dogs are certified to track humans and detect wildlife. Luepke says that when given a piece of clothing such as a hat or glove, the dogs can find someone hiding in dense forest or vast prairie. Dogs certified in wildlife detection can "sniff out fish or elk meat in a cooler, or a gut pile out in the hills somewhere," Kline says. The enforcement dogs help search-and-rescue missions by locating lost or injured hikers or hunters.

Luepke says he's heard from K9 handlers in other states that their dogs help de-escalate tense situations in which wardens must confront hunters—who are usually armed. "It seems that people tend to calm down when a dog is around," Luepke says.

To ensure the dogs are always ready for action, Kline and Luepke regularly run their four-legged partners through drills, such as sniffing out fish and game meat, finding hidden objects, and tracking people. Basic obedience is reinforced daily.

"We try to practice one skill every day," Kline says. "It keeps the dogs sharp—and it keeps us sharp, too."

Behind the Curtain

Montana's state parks system is struggling, even as employees do all they can to keep sites clean, accessible, and enjoyable.

BY TOM DICKSON

Amy Grout is nearing her breaking point. The Montana Fish, Wildlife & Parks state parks manager oversees five of the six state parks on Flathead Lake—including 2,160-acre Wild Horse Island and the always-crowded Wayfarer near Bigfork. Grout says her nine paid employees and 21 volunteers struggle to accommodate the 300,000-plus state parks visitors who throng to the mountain-framed lake each summer—and increasingly during the "shoulder seasons" of March, April, September, and October. On busy summer weekends, she and her assistant manager—a young mother with an infant at home—race from park to park helping other staff unclog toilets, empty trash cans, patrol beaches, take camping reservations, handle visitor conflicts, and respond to medical emergencies. The volunteers work long hours in hot parking lots, sometimes with just one 15-minute break all day. "We can barely hold it together," Grout says.

Throughout Montana's state parks system, employees are feeling the strain of insufficient staff and failing infrastructure. While statewide park visitation has increased nearly 50 percent over the past decade, budgets and staff size have remained flat. To maintain basic visitor services, managers have had to postpone repairing sewage and electrical lines, roads, docks, and other aging infrastructure. The parks system now faces a $22 million maintenance backlog. "We have underinvested in our parks, even as they have become more popular and staff struggle to manage growing demands and failing infrastructure," a governor-appointed citizen commission created to improve and strengthen Montana's state parks recently concluded. "The result is a system that is stressed to the breaking point."

Yet despite the pressures, parks employees make sure parks are clean, safe, and enjoyable. A recent audit by the Legislative Auditor's Office found that state parks are tidy and well run. In surveys, visitors regularly give the sites top marks. "Every grain in our being is about doing whatever it takes to keep parks open and making sure people have a positive experience," Grout says.

Ironically, that dedication could be part of the problem.

CRAIG MOORE

BARELY AFLOAT A stand-up paddleboarder glides over the glassy waters of Flathead Lake, a treasured Montana weekend and holiday destination. Several state parks on the lakeshore are often full to capacity, forcing employees and volunteers to work long hours with little relief.

We have this 'cowboy up' mentality, where we just suck it up and carry on. That means our guests never see all the stress and unpaid work going on behind the scenes."
—Amy Grout, Flathead Lake State Parks Manager

"We have this 'cowboy up' mentality, where we just suck it up and carry on," Grout says. "That means our guests never see all the stress and unpaid work going on behind the scenes." Like many state parks employees, Grout says she's coping the best she can. "But I don't know how much longer I can keep this up."

STEADY GROWTH

Montana launched a fledgling state parks system in 1939 when the legislature created a commission to preserve historic, scientific, archaeological, scenic, and recreational sites such as Lewis & Clark Caverns, the state's first park. In 1953 the commission was abolished and parks lands were transferred to the State Highway Commission. When outdoor recreational activity in Montana exploded in the 1960s, the legislature consolidated administration of Montana's recreational lands and waters and shifted parks management to the Department of Fish and Game (which changed its name to Montana Fish, Wildlife & Parks in 1979).

Over the past 80 years, the state parks system has grown steadily as lawmakers have added sites, many of which are locally significant but too big for a county or city to manage. Today Montana is home to 55 state parks, compared with 30 in Idaho and 40 in Wyoming.

Montana's state parks range from those that provide amenities found in national parks—visitor centers, guided tours, annual special events, campgrounds with electrical RV hookups—to primitive sites that lack even an outhouse. The system includes Native American cultural sites, geological wonders, recreational hubs, and seven National Historic Landmarks.

Almost every Montanan values state parks. A 2012 University of Montana survey found that 99 percent of residents considered Treasure State parks to be important.

Yet many people mistakenly believe their state income tax dollars pay for state parks. In fact, funding comes from the light vehicle registration fee, camping and nonresident entrance fees, and portions of the state accommodation, motorboat, and coal taxes.

Since 2013, the system has been overseen by the Montana State Parks and Recreation Board (similar to the Fish and Wildlife Commission), whose five members are appointed by the governor. The board sets policies, provides direction, establishes rules, and approves acquisitions, budgets, and major construction projects.

ROUGH PERIOD

Most state parks systems across the country are managed as part of wildlife departments or natural resources agencies. Yet some park advocates wonder whether the systems might be stronger and healthier if managed by other state agencies or even as their own departments (despite entailing costly additional administrative expenditures). In Montana during the 2010s, a movement to pull state parks out of FWP emerged; at one point, legislators considered a bill to move management to the Department of Commerce.

Tom Dickson is editor of Montana Outdoors.

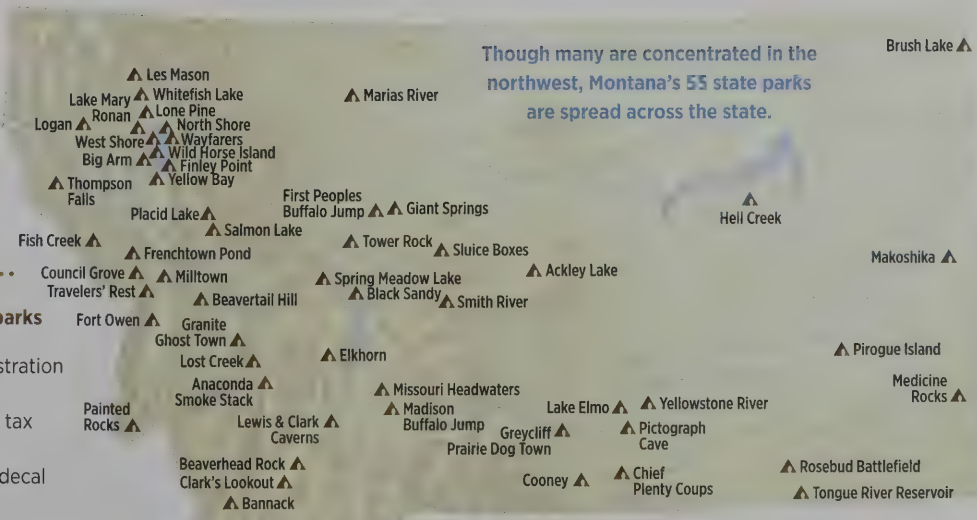
JEREMIE HOLLMAN

POPULAR PLACES Clockwise from top left: Montana's state parks include geologic wonders such as Lewis & Clark Caverns and Medicine Rocks, recreational attractions like the Smith River, and National Historic Landmarks like Bannack. Almost all Montanans say a state parks system is important to them.

Most Montanans believe that their state income tax dollars pay for state parks. In fact, funding comes from the light vehicle registration fee, camping and nonresident entrance fees, and portions of state accommodation, motorboat, and coal taxes.

How Montana's state parks are funded:

- 33% Light vehicle registration
- 21% Various park fees
- 16% Accommodations tax
- Coal tax
- 13% Motorboat & fuel decal
- 2% Federal funds
- 2% Other



CLOCKWISE FROM TOP LEFT: JEREMIE HOLLMAN; JACK AND LISA BALLARD; DAN OLDENBURG; JAY L. CROSS

Debate over the parks system's future created friction within FWP. Internal communication rifts in turn hampered the department's ability to provide strict financial oversight of the Parks Division budget. During the 2017 legislative session, lawmakers learned the division had built up a fund balance of $11 million, even as it was publicizing a $22 million backlog in deferred maintenance. "Apparently, since its future was in limbo, Parks delayed spending on budgeted expenditures while waiting to see what its final administrative location would be," explains Angie Grove, chair of the Parks and Recreation Board and former deputy of performance audits with the Montana Legislative Audit Division. "At the same time, FWP also lacked some essential financial tracking controls."

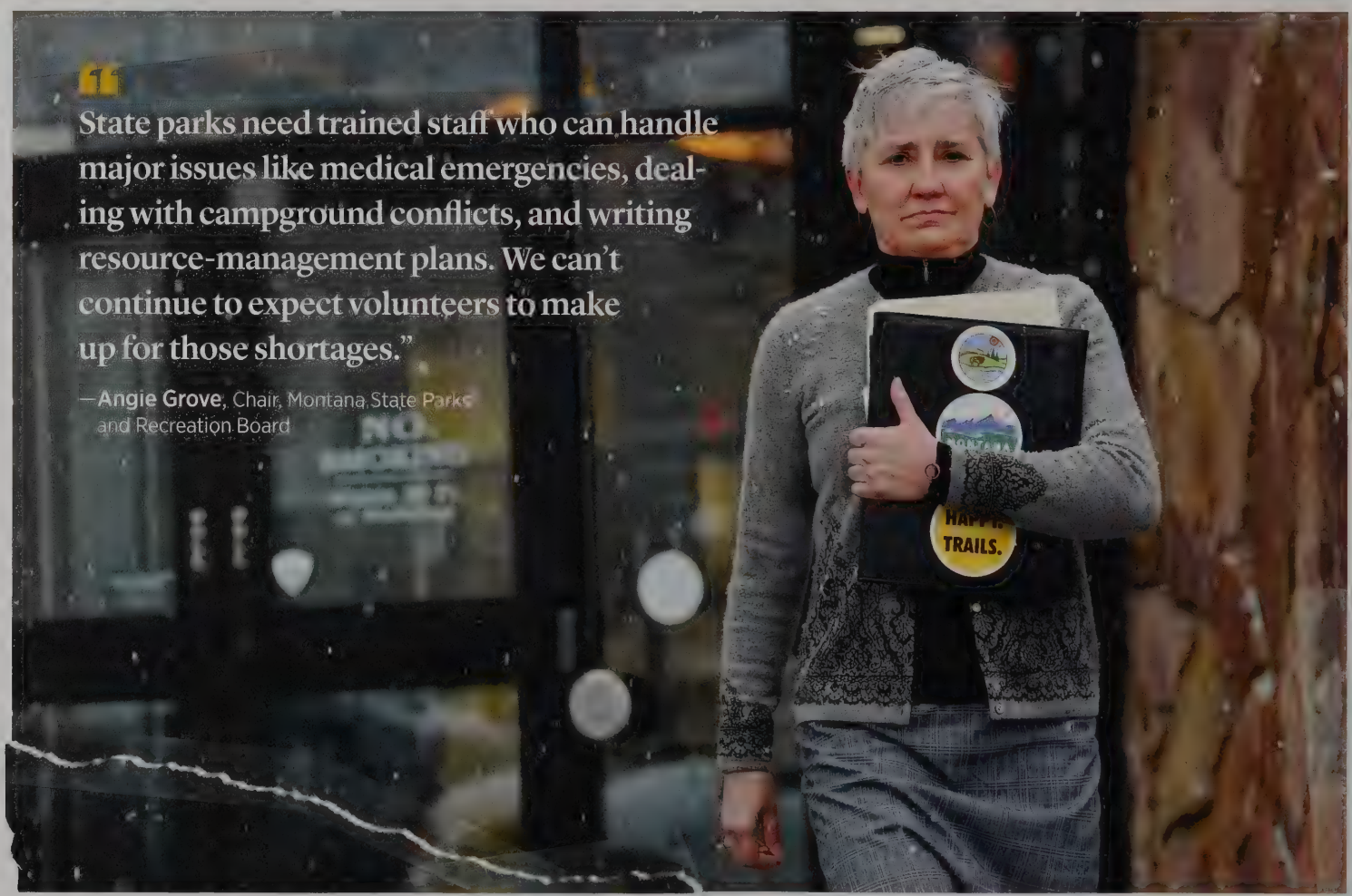
Controversy over the budget issue triggered a legislative audit, replacement of the Parks Division administrator, and appointment of a new Parks and Recreation Board. Governor Steve Bullock also appointed a 12-member Parks in Focus Commission in early 2018 to advise FWP and the board on improving operations and generating more public support and funding. The governor made clear that the Parks Division would remain in FWP.

"Montana has had this discussion again and again over where Parks should reside, and the final answer is always the same," Grove says. "FWP is the logical fit because the department is responsible for managing outdoor recreation such as hunting and fishing. Parks-based recreation fits right in."

Beth Shumate, who now heads the Parks Division, says another reason FWP is the logical home for Parks is the agency's network of regional offices. "They are where people across Montana find information about hunting, fishing, camping, state parks, trails—you name it," she says. "The department also has enforcement capabilities to ensure public safety and protect resources, which are key needs for Montana's state parks system."

"A WORLD OF TROUBLE"

On a windy afternoon in late December, park manager Clark Carlson-Thompson emerges from his closet-sized office to show a visitor around Giant Springs State Park. Few people are braving the chill this day to view the park's namesake natural feature, which gushes 150 million gallons of water daily into the Missouri River. But according to Carlson-Thompson, the park is mobbed most months. Its 400,000-plus annual visits make Giant Springs Montana's busiest state park. Without the $85,000 for extra staffing he receives each year from NorthWestern Energy, which owns much of the

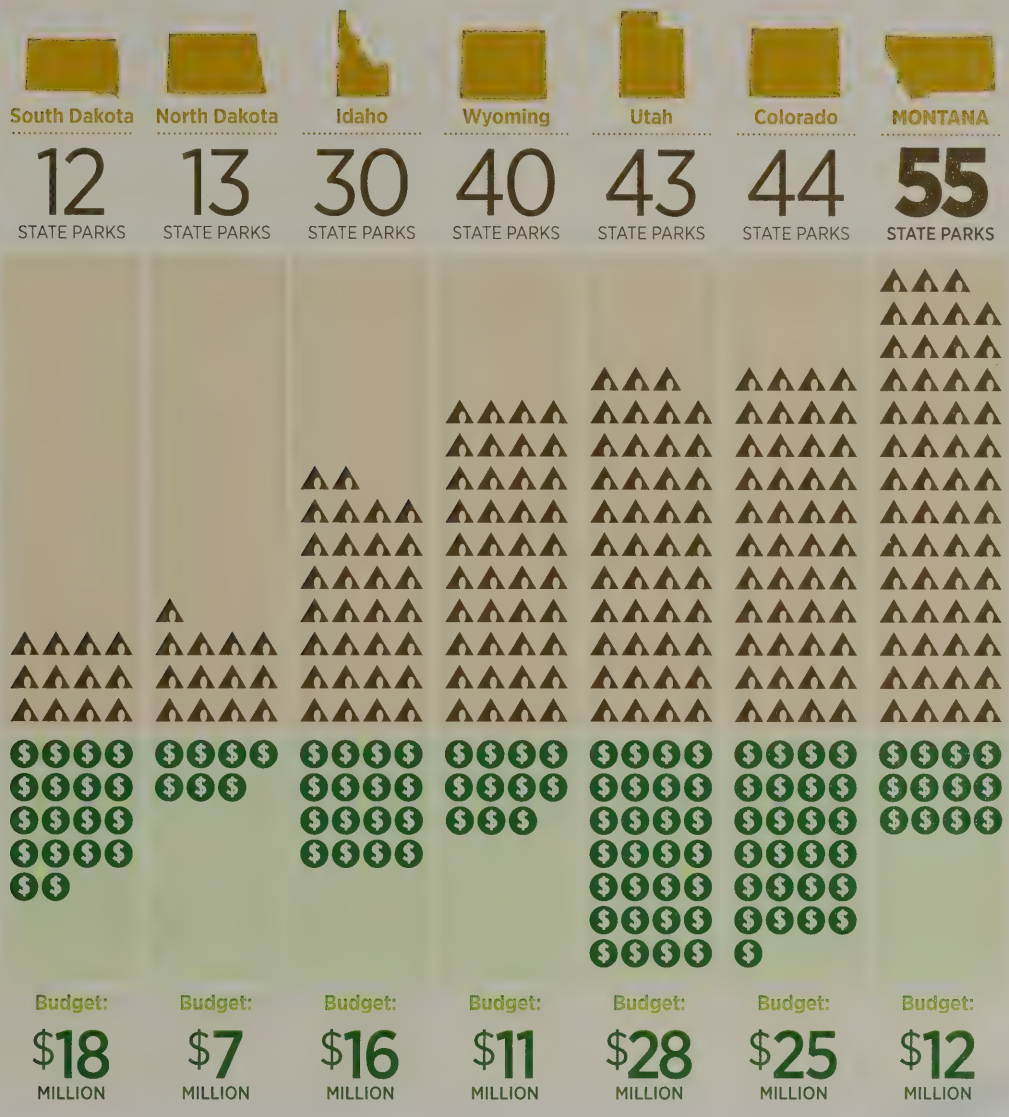

"State parks need trained staff who can handle major issues like medical emergencies, dealing with campground conflicts, and writing resource-management plans. We can't continue to expect volunteers to make up for those shortages."
—Angie Grove, Chair, Montana State Parks and Recreation Board
TRAILS.

THOM BRIDGE

MORE PARKS, LESS FUNDING

Montana has the most state parks of any state in the region, yet one of the smallest state parks budgets. South Dakota, by comparison, has a 50 percent larger budget with less than one-quarter the number of parks. The closest state in park numbers is Colorado, with 44, but with a budget more than double Montana's.

Montana's state parks budget from recent FWP summaries. Other states' estimated park numbers and budgets from "Montana State Parks & Recreation Strategic Plan 2015-20."



park's property, "we'd be in a world of trouble," Carlson-Thompson says.

Other managers are already there. The manager of three northwestern Montana state parks, Brian Schwartz says recent budget cuts required laying off a part-time maintenance worker at Lone Pine State Park. "He was working only 400 hours a year, but the loss has meant that remaining staff and I have to abandon other duties to clean the park and visitor center and operate the welcome desk on summer weekends," Schwartz says.

Dave Bennetts, responsible for three other northwestern state parks, says his entire staff at Les Mason State Park, on popular Whitefish Lake, consists of two volunteers. "It's in desperate need of capital investment and staffing assistance," he says. "There's no drinking water, only one latrine, and the parking lot is packed all summer."

Throughout Montana's parks system, aging trucks, tractors, backhoes, and other essential equipment constantly require repair. In some parks, leaky roofs and sagging windowsills need replacing. Peeling paint, clogged septic lines, potholed roads, faulty electrical systems, and failing RV dump stations afflict others. Several boat ramps and docks are broken down. Staff burnout is common.

Adding to the stressed system is ever-increasing visitation. The number of visits to Travelers' Rest State Park has doubled over the past decade. "Shoulder season visitation alone is now higher than our entire annual visitation 10 years ago," says park manager Loren Flynn. The park's operating budget—like that of the entire state system—has not kept pace. "That means a greater percentage of our budget goes to toilet paper, cleaning and office supplies, rising energy and other utility costs, and training the volunteers and AmeriCorps members we increasingly rely on," Flynn says. "We end up skipping long-term maintenance but then having to spend precious time putting Band-Aids on immediate problems like leaking septic systems."

With only 98 employees to manage the 55 state parks and 2.5 million annual visits, the FWP Parks Division increasingly relies on volunteers. Flynn says Travelers' Rest could not function without Lewis and Clark enthusiasts who help lead tours and staff the visitor center. The same holds true elsewhere. "I don't even want to think what would happen if we lost even a few of our volunteers. Weekends at Flathead would be chaos," Grout says.

Even volunteers are finding it hard to keep pace. Bannack State Park relies on several thousand hours of volunteer work each year. "Some of them say they just can't do it anymore," park manager Dale Carlson says. "Add to that our paid employees working up to 16 hours a day in peak periods, and we're looking at some extremely stressed staff."

Grove says the state should not expect volunteers to make up for shortages in paid employees. "You need trained staff who can handle major issues like medical emergencies, dealing with campground conflicts, and writing resource-management plans," she says.

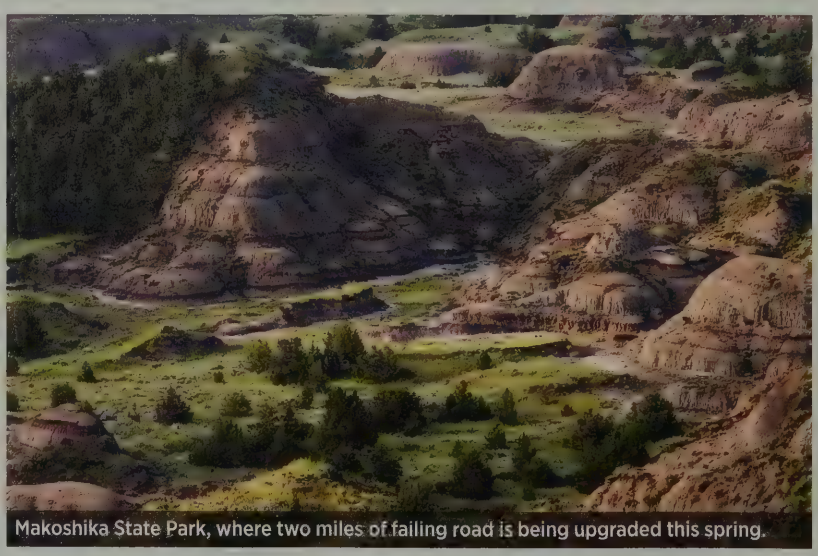
Montana's isn't the only parks system struggling to accommodate burgeoning use. City, state, and national parks across the country report increased visitation—spurred by growing populations and more active retirees—that outpaces budgets and staff size. Record attendance in recent years at Yellowstone and Glacier National Parks has contributed to a combined maintenance backlog of $700 million.

Parks Division makes progress

Despite chronic budget and staffing shortages, FWP's Parks Division has made major capital investments over the past several years thanks to funding authority granted by the Montana Legislature, says assistant administrator Tom Reilly. Progress includes:

- A partnership with the University of Montana's Biological Research Station on Flathead Lake to upgrade the failing septic system shared by the station and Yellow Bay State Park. FWP provided $50,000 toward the project and resolved a long-standing wastewater infrastructure problem within the park.
- Improvements, to be completed this spring by a private contractor's crew, to the interior lighting, electrical systems, and handrails at Lewis & Clark Caverns State Park. This spring FWP will also seek bids for replacing the wastewater-treatment system that serves the upper area and concession building.
- Replacement of an outdated 1980s fire alarm system within the historic townsite at Bannack State Park.
- Upgrading roughly two miles of failing access road within Makoshika State Park. The project began in fall of 2018 and will be completed this spring.

"We're proud of the progress we've made over the past two years. But there's still much more to be done to upgrade the infrastructure of Montana's state parks to where it needs to be," Reilly says. ■



Makoshika State Park, where two miles of failing road is being upgraded this spring.

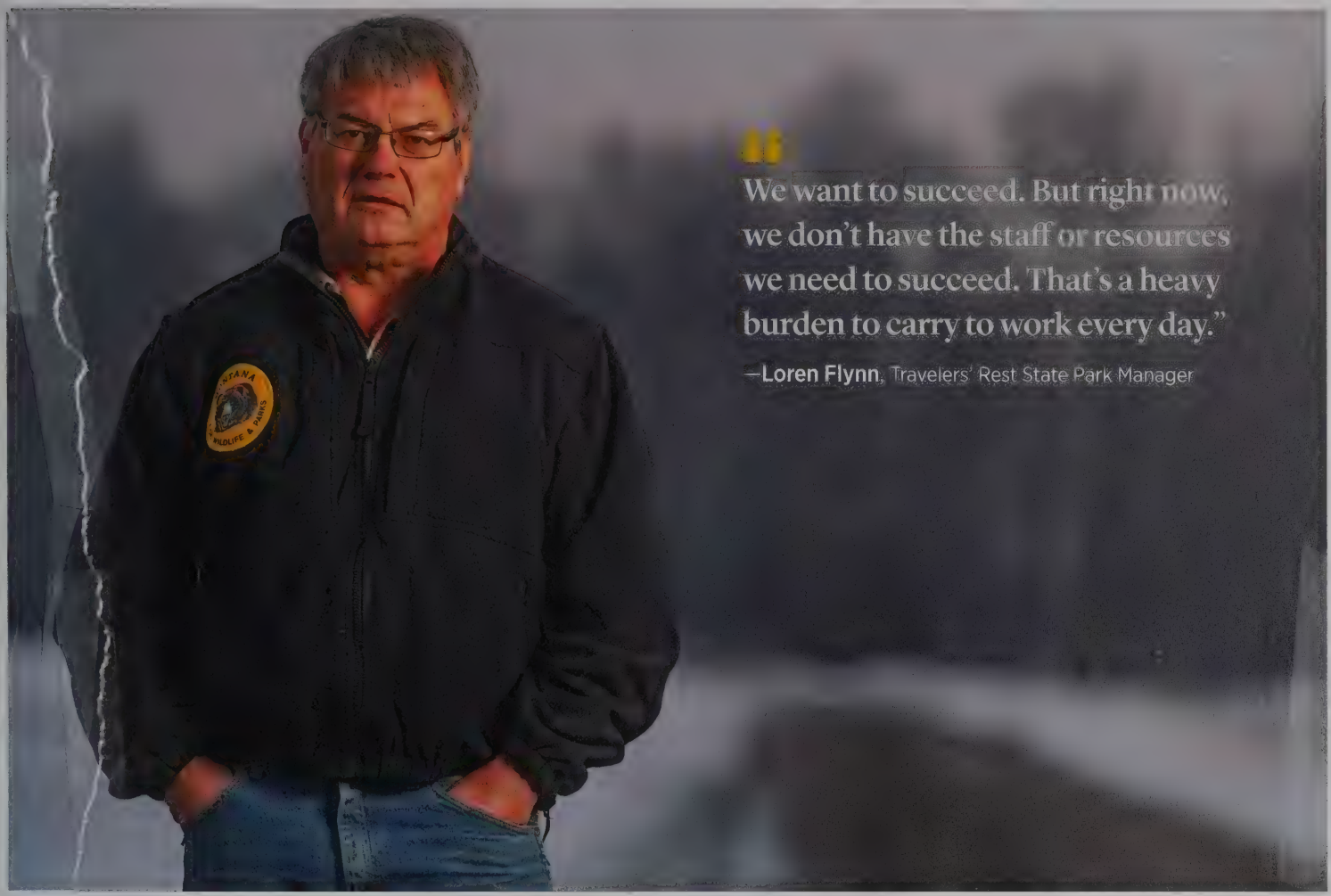
HAPPY CAMPERS

Yet visit a state park, and all seems rosy. "Unless they somehow know what's happening behind the scenes, our guests have no idea that we're barely keeping the wheels on the bus," says Dave Landstrom, FWP's northwestern region parks manager. A 2017 post-visit survey of nearly 3,000 Montana state parks campers found that 85 percent rated their experience as very good or excellent.

Those rave reviews could soon turn sour. Without funding and staffing hikes, state parks officials fear that visitors will see a decline in service and facilities. A possible attendance drop could hurt local economies and even state coffers. Visitors to Montana's state parks spend nearly $300 million each year on gear, lodging, food, gas, and more, sustaining 1,600 tourism jobs in local economies, according to a 2010 UM report.

With so much at stake, state parks advocates welcomed the 2018 legislative audit and Parks in Focus Commission review. In December, the commission submitted four final recommendations, similar to those made by auditors earlier in the year: accelerate cohesion between FWP's Parks and other department divisions; strengthen the Parks Division's capacity by increasing and developing staff and establishing clear strategic priorities and efficient management systems; build stronger partnerships and advocacy groups; and develop short- and long-term funding strategies to "build now for the future state parks system that

LEFT TO RIGHT: DEE LINNELL BLANK; TOMMY MARTINO


"We want to succeed. But right now, we don't have the staff or resources we need to succeed. That's a heavy burden to carry to work every day."
—Loren Flynn, Travelers' Rest State Park Manager

Montanans deserve."

Grove reports that FWP is taking the recommendations to heart. The department has already begun to categorize state parks in a way that guides user experiences, budget priorities, and investment strategies. "This needs to happen quickly, so people see the Parks Division taking concrete steps to improve visitor services while also improving the way it allocates and generates money," she says.

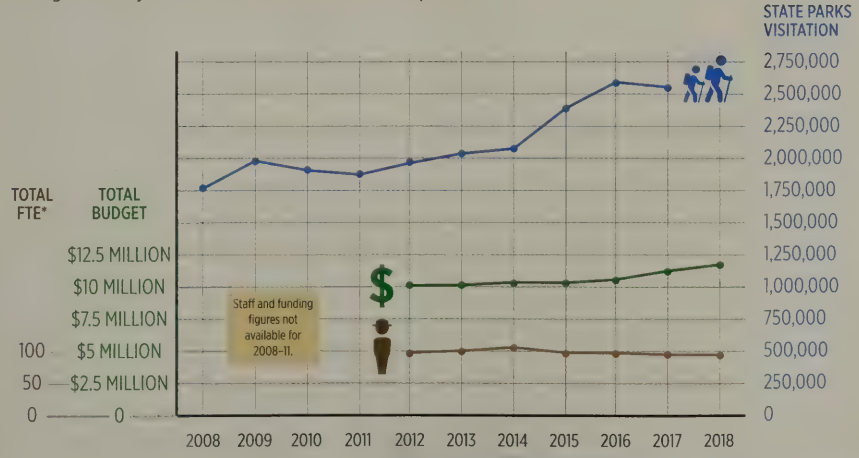
The agency has also fully integrated the Parks Division into its long-term vision plan. It has consolidated all budget functions in a centralized administrative unit to ensure transparency and consistency. FWP's chief financial officer has been given enhanced fiscal oversight and regularly meets with Parks personnel to review the division's budget. After a several-year hiatus, department communication outlets such as *Montana Outdoors* once again include state parks programs and issues.

Flynn, the Travelers' Rest manager, says he's encouraged that Montana leaders are working to make state parks stronger, more resilient, and better able to meet public needs. "Here at Travelers' Rest, there's so much more we could be providing visitors and local residents," he says. "We want to succeed. But right now, we don't have the staff or resources we need to succeed. That's a heavy burden to carry to work every day."

Staff and funding lag behind visitation

From 2008 to 2017, the number of visits to Montana's state parks rose by 47 percent. Yet funding and staff size has stayed roughly the same. The disparity has created staff burnout along with deteriorating electrical, sewage, water, road, and trail systems.

*FTE = An FTE (Full-Time Equivalent) represents one or more persons working individually or in combination to fulfill one full-time position.



FAR MORE THAN FISHING

BY PEGGY O'NEILL

Considering the wide variety of water- and land-based outdoor recreation and wildlife habitats these riparian areas provide, Montana's "fishing access" sites may be due for a new name.

Florence resident Roger DiBrito loves Montana's fishing access sites—though not necessarily for casting a line. "I'm not much of a fisherman, but I consider our local site a recreational treasure," he says.

The retired teacher and his wife visit nearby Chief Looking Glass Fishing Access Site (FAS) along the Bitterroot River to hike, watch wildlife, ride their bikes, picnic, launch canoes or kayaks, and just relax. They also take their grandkids—ages 10 and 11—who like to fly-fish, swim, innertube, and explore nature. "It's so important to me and my family. We view it as our neighborhood park," DiBrito says.

Though designated only by simple signs showing a fish and a hook, what Montana's 338 fishing access sites provide in terms of outdoor recreation is anything but simple. "With no buildings or on-site staff, fishing access sites appear modest," says Pat Saffel, Montana Fish, Wildlife & Parks regional fisheries manager in Missoula, "but they create public access to an amazing variety of outdoor adventure."

FASs provide fishing access, certainly, but also extensive "water access"—for sailing, waterskiing, innertubing, stand-up paddleboarding, canoeing, kayaking, and rafting. "We use fishing access sites all summer for youth rafting and canoeing trips, and to get kids down to the rivers to swim and play," says Porter Hammitt, director of Missoula Outdoor Learning Adventures, which uses FASs on the Clark Fork, Bitterroot, and Blackfoot Rivers. "It's incredible, the amount of river access these sites provide the public," he says.

Yet even "water access" sells the sites short. People also visit FASs to camp, picnic, hike, walk their dogs, photograph birds, ride horses, and sunbathe. Along the Yellowstone River, rockhounds use them to reach gravel bars to search for agates.

The sites are visited by 4-H clubs and school groups for nature study. Each fall, the Montana Natural History Center in Missoula takes roughly 1,700 fourth-graders to Kelly Island FAS on the Clark Fork River and several sites on the Bitterroot. "Fishing access sites are ideal places for kids to learn about wildlife and plants because the riparian habitat is so diverse," says Lisa Bickell, the center's education director. "It would be really hard to accomplish what we do each year if we didn't have these public lands."

Dave Fuller, regional FAS program manager in Glasgow, says Wolf Point disc golf enthusiasts and local businesses helped establish a new nine-hole course at the Lewis and Clark FAS on the lower Missouri River. The FAS pavilion on Bearpaw Lake south of Havre, he adds, is booked throughout the summer for family reunions, wedding receptions, and other events.

Many fishing access sites also provide public hunting opportunities for white-tailed deer, pheasants, and waterfowl. On larger rivers such as the Missouri and Yellowstone, big game hunters launch boats at the sites to reach areas that hold otherwise-inaccessible mule deer, elk, and bighorn sheep.

"We want people to know that we have this huge network of public sites that provide all sorts of valuable recreational opportunities in addition to fishing," says Eileen Ryce, head of the FWP Fisheries Division.

WILDLIFE MAGNETS

In many ways, fishing access sites function as miniature wildlife management areas. Biologists say that habitat along streams, rivers, and lakes is some of the most ecologically diverse in Montana. Because they are prime spots for housing development, shorelines are rapidly being degraded. "Riparian areas like those at fishing access sites are among Montana's most important habitats for state 'species of concern' like the pileated woodpecker, white-faced ibis, and spotted bat," says Lauri Hanauska-Brown, chief of FWP's Nongame Wildlife

POPULAR PUT-IN Young paddlers with Missoula Outdoor Learning Adventures put in at the Johnsrud Fishing Access Site on the Blackfoot River. The youth-education organization says it relies on FWP access sites to bring kids to rivers for swimming and other outdoor recreation.

Peggy O'Neill is chief of the FWP Information Bureau in Helena.

LEFT: PHOTO ILLUSTRATION BY LUKE DURAN/*MONTANA OUTDOORS*. RIGHT: MISSOULA OUTDOOR LEARNING ADVENTURES

Management Bureau.

Also home to eagles, owls, ospreys, and other raptors, as well as mink, turtles, toads, migrating warblers, and other species, FASs provide "some of the best wildlife watching in Montana," says Jay Pape, FWP's regional FAS program manager in Bozeman.

An added plus: FASs are public lands, so anyone can go there. Ted Cook, of Bozeman, says he and his wife visit Cherry River FAS on the East Gallatin River every March to see migrating sandhill cranes and yellow-headed blackbirds. "It's how we mark the start of spring," he says.

Of course, all this recreational use comes in addition to the sites' primary purpose: a place for anglers to access rivers, lakes, and reservoirs. The sites are essential in a state where fishing is revered and public water access is protected by state law. A 2017 survey found that nearly half of all angling in the state is done after gaining access to water through a FAS

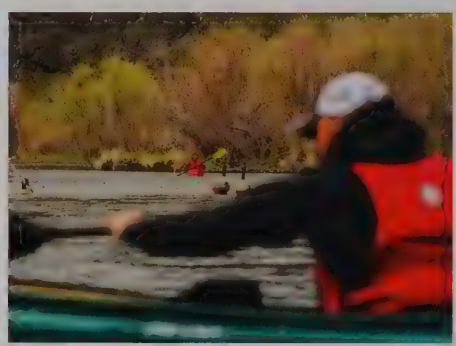
ANGLERS PAY

FASs are state lands managed by the FWP Division of Fisheries. The sites usually contain a boat ramp and vault latrine, and many offer primitive camping areas with picnic tables and fire rings. Some are on lakes and reservoirs, but most sites provide access to Montana's renowned rivers and streams.

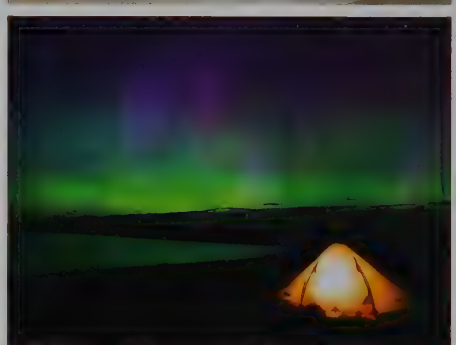
In addition to acquisition costs, FASs require the installation of boundary fencing, roads, parking areas, boat ramps, signs, and latrines. Costs for regular road grading, dust and weed control, trash pickup, ramp repair, caretaker services, and other general maintenance are ongoing.

Though FASs receive recreational use from a wide range of Montanans and state visitors, anglers pay almost all of the costs. The lion's share of funding comes from fishing license fees and matching federal dollars. A small slice comes from state vehicle registration fees. There are no day-use fees, though FWP charges camping fees at some sites where camping is allowed. "Lack of adequate funding is an issue that contributes to our maintenance challenges on FASs and hinders our ability to provide more amenities like trails and campsites for hikers, campers, and other visitors," Ryce says.

Some fishing access sites see only a handful of visitors each year. Others, like the popular ones on the Bitterroot River near Missoula or those on the lower Blackfoot and Madison, are crowded all summer. "People are out there loving the resource—for better or worse," Pape says.



MULTIUSE Clockwise from top left: In addition to their primary role for angling, Montana's 338 fishing access sites provide habitat for otters and other furbearers; access for kayaking and canoeing; areas for pet exercise; campsites for overnight camping; places to hunt pheasants, deer, and waterfowl; picnic sites for day outings; and areas next to water where photographers and birders can see raptors, ducks, geese, shorebirds, and other wildlife.



CLOCKWISE FROM UPPER LEFT: SHUTTERSTOCK; CINDY GOEDDEL; ERIC HEIDLE; JEREMIE HOLLMAN; BEN PIERCE; TOM DICKSON; SHUTTERSTOCK; SHUTTERSTOCK

SOME CHALLENGES

Because river and lake use grows each year, but no one's making any new rivers or lakes, some FASs fill beyond capacity during midsummer. Parking areas overflow and boaters must wait in line to use ramps.

On a few river stretches, more nonanglers than anglers use the sites. FWP recorded 207,000 "angler days" on the Madison River in 2017—the most ever on any Montana river. Yet according to the Bureau of Land Management, the 20-mile stretch from Warm Springs to Black's Ford receives roughly 400,000 "user days" each summer by growing numbers of innertubers.

"We've had to double the number of latrines and dumpsters at our Black's Ford FAS," says Travis Horton, FWP regional fisheries manager in Bozeman.

Fortunately, such heavy use is relatively rare. Despite FASs receiving a total of nearly 4 million visits each year, user conflicts seldom get out of hand. Anglers may gripe when someone's trailer takes up two parking spots, and boaters complain when kayakers don't follow etiquette that calls for loading and unloading away from ramps before and after launching. But for the most part, people using FASs respect one another. "We find that almost all of this varied use is compatible with fishing," Ryce says. "A person out bird watching or throwing sticks for their dog after work doesn't bother someone who's launching a drift boat to fish the evening hatch."

Even when users get in each other's way, it's often only momentarily. Saffel says that anglers launching a boat might be delayed for a few minutes as they work around sunbathers crowding the ramp area, but once on the water they quickly escape the crowds. "Besides," he adds, "where we see most of the sunbathing and tubing at FASs is on areas of rivers where water is warmer and slower and the trout fishing isn't as good, or in the middle of a sunny afternoon when the fishing slows down," Saffel says. "Water temperature and sunshine naturally spread out the recreational use."

OUTDOOR ADVENTURERS A youth group canoes down the Bitterroot after putting in at an FWP fishing access site near Lolo.

GOOD FOR LOCAL ECONOMIES

FAS-based outdoor activities contribute to Montana's renowned high quality of life; they are also good for local businesses. Restaurants, motels, and gas stations thrive on the traffic that FASs attract. "There's no question that they contribute to the $7 billion spent on outdoor recreation in Montana each year," says Ryce. "If there isn't any access, there isn't any fishing, not to mention boating, canoeing, or many other things that residents and tourists like to do on the water."

FWP works with communities and sportsmen's groups to care for many FASs. One day each summer on the lower Blackfoot, volunteer scuba divers scour the river bottom for shoes, sunglasses, and beer bottles and cans lost by the near-constant stream of innertubers. Residents pick up streamside trash at the river's heavily used sites. Several years ago, FWP coordinated a community cleanup of Alberton Gorge on the lower Clark Fork River. Volunteers bagged 1,600 pounds of trash, including 40 car, truck, and tractor tires. Saffel says the department recently worked with anglers and the St. Regis Resort District to improve the St. Regis FAS on the Clark Fork.

The term "fishing access site" has become part of the lingo used by everyone who recreates on Montana's waters. But as more and more people visit these sites for recreation other than angling, maybe it's time to consider a new name and look. "The fish and hook image on the signs is a bit misleading," Ryce says. "We're considering changing the signs to better reflect the variety of recreational opportunities that the sites provide."

Each year, FWP adds four to six FASs to the statewide system. DiBrito, the retired teacher, hopes the acquisitions continue, no matter what the sites are called. "With all the development we see in Montana, it seems that we're losing more and more wild places every year," he says. "That makes these peaceful little sanctuaries even more important than ever."

FWP's free "Fishing Access Sites Field Guide" is available for download at fwp.mt.gov.

ECOLOGICALLY DIVERSE Riparian areas like those protected by fishing access sites are some of Montana's most important wildlife habitats.

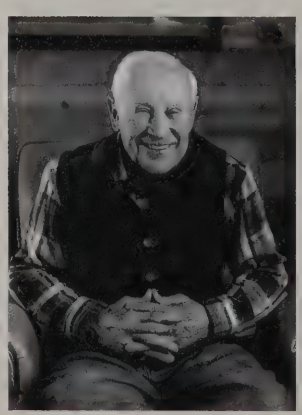
TOP TO BOTTOM: MISSOULA OUTDOOR LEARNING ADVENTURES; JASON SAVAGE

MONTANA'S CONSERVATION HEROES

Representing a mix of occupations and approaches, the newest inductees into the Montana Outdoor Hall of Fame embody a common vision of protecting the lands, waters, and wildlife that make Montana the last best place. **By Tom Palmer**

Editor's Note: At a public ceremony in Helena last December, 16 conservation heroes—living and deceased—were inducted into the Montana Outdoor Hall of Fame. Nationally renowned conservation leader and author Jim Posewitz of Helena, for years a biologist and conservation advocate with Montana Fish, Wildlife & Parks, founded the hall of fame in 2012 with support from the Montana Historical Society, which verifies the histories and significance of nominees. A volunteer board of representatives from Montana's Outdoor Legacy Foundation, the Montana Wildlife Federation, the Montana Wilderness Association, Montana Trout Unlimited, and FWP select new inductees every two years. The Cinnabar Foundation and NorthWestern Energy are partners in the project.

Posewitz, himself a 2016 inductee, introduced the 2018 inductees:



Jim Posewitz

When Montana people ratified our Constitution in 1972 it began with: "We the people of Montana (are) grateful to God for the quiet beauty of our state, the grandeur of our mountains, the vastness of our rolling plains...." They did so knowing that within those grand mountains and across those vast plains there lived a richly restored fish and wildlife abundance, a grand collection of waterways flowing fresh and free, and quiet places destined to remain forever wild.

Today, 154 years after the Montana Territory was born, we gather to recognize that these precious outdoor amenities came to our time carried by individuals who cared, showed up, and stood up on their behalf. They are amenities that, in the words of Theodore Roosevelt, "add to the beauty of living and therefore to the joy of life."

The 16 people we recognize tonight are but a small sample of the legions of worthy and deserving Montanans. These people, along with those inducted in 2014 and 2016, came from all facets of Montana society. They include pioneers, politicians, artists, resource managers, grassroots activists, and individual Montanans—people who simply would not allow America's last best place to just slip away. We thank and honor them all.

JOEL CALDWELL

Lewis and Clark at Eagle Creek, 1967. By Thomas Hart Benton. Courtesy of the Eiteljorg Museum of American Indians and Western Art, Indianapolis.

Michel Pablo, Charles A. Allard

2018 INDUCTEE PHOTOS COURTESY OF THE MONTANA OUTDOOR HALL OF FAME

MICHEL PABLO
1844–1914
CHARLES A. ALLARD
1852–1896

There was a time when 30 million bison roamed North America. In 1830, mass destruction of the animals began. Two million bison were slaughtered in 1870 alone.

Then came two 19th-century men born to Indian mothers who worked together to save the buffalo—and by extension, perhaps, their native culture—from extinction.

In 1873, reservation ranchers Charles A. Allard and Michel Pablo purchased several orphaned calves that had been brought over the Continental Divide to the Flathead Valley.

Allard was a chatterbox, an effusive salesman. Pablo, a pensive agriculturist and businessman. They made a perfect team.

They turned their buffalo out in the fence-free Flathead and Mission Valleys.

While their intent was entrepreneurial, they also aspired to help replenish a wild buffalo population.

When Allard died in 1896, following complications from a fall from his horse, the Allard-Pablo herd numbered 300. Allard's half-share was dispersed to several U.S.

locations, with one-third purchased by Kalispell's Charles E. Conrad.

By 1906, Pablo's 700 buffalo ran headlong into the Flathead Valley's federal homestead boom. With settlers populating the once-open range, Pablo worried about the herd's safety. He offered it to the U.S. government, but officials refused. So he turned to Canada. Between 1908 and 1910, he shipped nearly 500 head to Alberta's Wood Buffalo Park.

The U.S. government's reluctance to aid Pablo's herd riled the American public. William Hornaday's American Bison Society responded by working with President Theodore Roosevelt to provide land for what became the National Bison Range.

Today, some 30,000 wild bison inhabit North America, a historical repopulation launched by the Allard-Pablo partnership. Visitors to the National Bison Range in Moiese, Yellowstone National Park, South Dakota's Custer State Park, and Canada's Wood Buffalo Park are treated to the sight of bison herds in their native range.

Roughly 140 years after Allard and Pablo purchased those orphaned buffalo calves, President Barack Obama signed the National Bison Legacy Act of 2016, establishing the bison as the official mammal of the United States.

★

ARNOLD BOLLE
1912–1994
HELEN BOLLE
1916–2016

Arnold Bolle was educated in his hometown of Watertown, Wisconsin, the University of Montana, and Harvard University, where he earned a master's degree in forestry and later a Ph.D. in public administration.

While a student at UM, Arnie met fellow student Helen Swan. Helen's father, K.D. Swan, was the U.S. Forest Service's first official photographer. Upon their UM graduations in 1937 and receipt of his first paycheck, Arnie and Helen were married.

Arnie joined the UM forestry faculty in 1954 and eight years later was appointed dean of the university's School of Forestry.

The Bolle home was a hub of environmental discussion for students, politicians, and activists. Helen welcomed them all. Together the Bolles embraced local conservation concerns, and Helen's huckleberry pies became legendary at fundraising events.

In 1970, at the request of Montana's U.S. Senator Lee Metcalf, Bolle and six of his UM colleagues documented a clear-cutting fiasco on the Bitterroot National Forest. The study was titled *A University View of the Forest Service* but commonly called the Bolle Report. Metcalf published the Bolle Report as a Senate document, and thousands of copies were distributed. The report triggered a bitter national forest land management struggle that eventually led to significant changes in forest policy and passage of the National Forest Management Act of 1976.

Helen and Arnold Bolle

The Wilderness Society in Washington, D.C. honored Bolle by establishing its Bolle Center for Ecosystem Management and its highest honor, the Robert Marshall Award.

In 1994, Liz Claiborne and Art Ortenberg donated a significant gift to the UM Foundation to enable formation of the Bolle Center for People and Forests.

The report triggered a bitter national forest land management struggle that led to passage of the National Forest Management Act of 1976.

JACK ATCHESON, SR.
1932–2018

Born in Pennsylvania, Jack Atcheson, Sr. arrived in Butte as an adolescent when his family moved West. He joined the U.S. Army as a teenager and volunteered for combat duty in the Korean War.

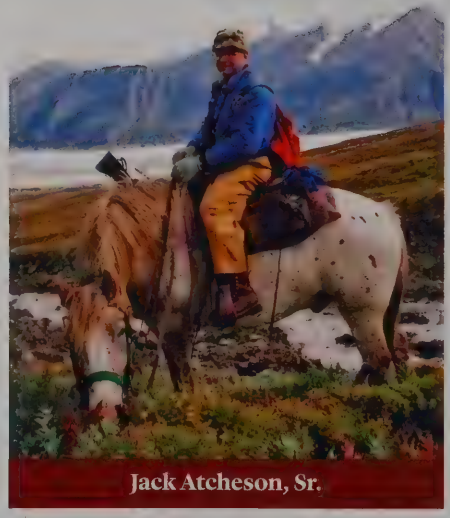
When he returned home, he and his wife, Mary Claire, built a Butte taxidermy business into a worldwide hunting enterprise: Jack Atcheson & Sons, Inc. But it was an incident on Montana's Hi-Line that ignited his activism.

In 1978, Atcheson was hunting on what he believed to be state-owned public land when he was booted off. Atcheson returned home and read the legal statutes that provide for Montana's State School Trust Lands. He learned that fees paid to graze or mine the lands help fund Montana's public schools. Still, Atcheson maintained that state lands ought to be accessible to all.

Atcheson helped found what became the Montana Coalition for Appropriate Management of State Lands. That group cleared a path through arcane legalities that eventually allowed the public to pay a small fee to use school trust lands for recreation. The effort created the potential to open 5.2 million acres to resident and nonresident hunters, anglers, bird watchers, and others.

Later, Atcheson joined the Montana Coalition for Stream Access, which spearheaded advocacy for the Montana Stream Access Law. Atcheson also championed wildlife-friendly fencing on public and private lands.

In 2000, he received *Outdoor Life* maga-


Jack Atcheson, Sr.

zine's Conservation Award for public access advocacy and for his "lifetime of achievement in the conservation of wildlife and wildlife habitat."

★

ARNOLD "SMOKE" ELSER

1934–

When Arnold "Smoke" Elser began working as a backcountry outfitter in 1964, he quickly saw that campsites and grazing meadows were damaged from overuse. He became among the first to use lightweight tents and other gear, which reduced the number of mules in pack strings. In camp, he laid down light plastic netting to protect the grass under tents and other trampled areas. He tied his saddle horses to high lines rather than to trees, because ropes girdled the trunks.

Elser eventually taught 3,000 people these conservation techniques in a horse-

Smoke Elser

packing class at the University of Montana.

Yet it was the campfire stories he and his wife, Thelma, told that captured the imagination of the guests who in turn became new advocates for protecting Montana's wild country. For instance, on a summer pack trip in 1969, Elser's party encountered a bulldozer punching in a road near the Middle Fork of the Flathead River just north of the Bob Marshall Wilderness boundary. "Nothing makes you madder than when you're telling your guests you're in a really pristine area and all of a sudden you run into a bulldozer," Elser recalled in a Montana PBS documentary that celebrated his legacy.

Elser also worked with *Missoulian* reporter Dale Burk (profiled below) to publicize U.S. Forest Service plans to develop the Middle Fork of the Flathead. That reporting helped spur federal designation of the Great Bear Wilderness and Scapegoat Wilderness.

Elser's recognition includes the Distinguished Alumnus Award from the University of Montana Forestry Alumni Association, the Missoula Conservation Roundtable's Lifetime Conservation Achievement Award (for him and Thelma), and the Back Country Horsemen of America's Legacy Award. In 2016, Elser was inducted into the Montana Cowboy Hall of Fame.

★

DALE BURK

1936–

Dale Burk grew up in a logging family in the Tobacco Valley. He knew the timber business, but his heart was in journalism.

For 10 years, Burk worked at the *Missoulian*, Missoula's daily newspaper. In 1968, his first year at the paper, he got to know Guy Brandborg, a forester on the Bitterroot National Forest. Their talks set Burk on a reportorial course in 1969 that resulted in a series of articles about U.S. Forest Service logging. Burk uncovered massive clearcutting, aggressive road building, and logging-centric management that gave short shrift to the concept of multiple use.

His groundbreaking reporting continued for several years. In 1971, the *New York Times* published on its front page Burk's photograph of Brandborg and a Wyoming senator viewing a clear-cut that resembled a carpet-bombed landscape. It enraged the nation.

Few environmental reporters existed

Dale Burk

Burke's front page photograph in the *New York Times* of two men viewing a Montana clearcut that resembled a carpet-bombed landscape enraged the nation.

then, much less in Montana. Burk broke new ground to inform Montanans about forest management—catalyzing crucial national support for reforms.

Burk's work also helped spark passage of the National Forest Management Act. His book, *Great Bear, Wild River*, was instrumental in the 1978 designation of the Great Bear Wilderness along the Middle Fork of the Flathead River.

Harvard recognized Burk's achievements with its 1975-76 Nieman Fellowship for journalism. His local club, the Ravalli County Fish & Wildlife Association, awarded him its Lifetime Achievement Award. The Missoula Conservation Roundtable names its annual award for "most outstanding citizen advocate" after Burk.

Burk and his work serve as reminders that journalists and a free press are vital to a civil society.

★

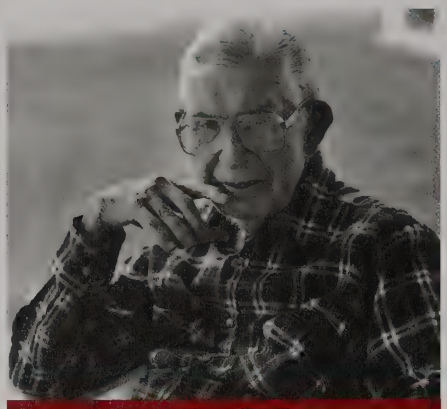
GEORGE GRANT

1906–2008

George Grant grew up in Butte, surrounded by a landscape so damaged by a century of mining and smelting that it became the U.S. Environmental Protection Agency's largest Superfund cleanup site ever. In the midst of the Great Depression, Grant would steal away to a cabin on the Big Hole River to spend summer days fly-fishing for trout.

Those bucolic outings awakened his conservation ethic. He evangelized for the Big Hole River for the rest of his life, becoming the river's fiercest advocate—and a model activist for some of the most profound river conservation battles in Montana history.

In the mid-1960s, Grant and Tony Schoonen (MOHOF 2016 inductee) convinced a nascent Trout Unlimited to take on its first national environmental battle,



George Grant

against the proposed construction of Raichle Dam on the main stem of the Big Hole. Grant and Schoonen formed an unlikely alliance with local ranchers to turn back attempts to build the dam at Notch Bottom. Today, the 150-mile-long Big Hole remains among the few free-flowing wild trout rivers in the United States.

Grant and Schoonen formed an unlikely alliance with local ranchers to turn back attempts to build the dam at Notch Bottom on the Big Hole River.

A Montana TU pioneer, Grant mobilized followers through *The River Rat*, the rabble-rousing newsletter he edited.

Later, to restrict the practice of bulldozing gravel for irrigation diversions in the Big Hole, Grant and Schoonen teamed up to advocate for Montana's landmark Natural Streambed and Land Preservation Act, commonly known as the "310 Law."

Grant was already an internationally acclaimed fly-tier, patenting in 1939 his method for weaving hackles. Two of his books, *Montana Trout Flies* and *The Master Fly Weaver*, are collector's items. In 1973, the Federation of Fly Fishers awarded Grant its prestigious Bud Buszek Memorial Award for excellence in fly tying.

Grant's legacy endures. Butte's TU chapter and a state Big Hole River fishing access site each bear his name. A 1991 FWP film, *Three Men, Three Rivers*, pays him tribute.

★

STAN F. MEYER

1935–

Stanley F. Meyer graduated in journalism from what was then Iowa State College in 1956, a year after his beloved Jane graduated with a similar vocational interest. They married and in 1957 moved to Great Falls, where Stan was hired as a radio and TV farm broadcaster. By 1964, both Stan and Jane had joined Wendt Advertising in Great Falls.

In Great Falls, Meyer took an interest in Lewis and Clark and the Corps of Discovery. In 1966, on a minuscule budget, he directed a 23-minute film depicting the Lewis and Clark Expedition's journey across Montana. It was that project that inspired a lifetime of conservation work.

In 1987, Meyer was named board chair of The Nature Conservancy (TNC) of Montana. He spent his time enthusiastically explaining TNC's conservation philosophy to the public. His mastery of collaborative resource management techniques attracted the attention of Montana's newly elected governor Marc Racicot. Racicot appointed Meyer, also a Republican, as a Montana FWP commissioner.

With Meyer's leadership, during an eight-year (1993–2001) stint as an FWP commissioner and chairman, the department preserved more than 250,000 acres of critical wildlife habitat via the purchase of conservation easements from willing landowners. Later, Meyer was enlisted to explain the hunter-funded easements to skeptical state lawmakers, stockgrowers, and farm groups. Those discussions helped get the state's Habitat Montana Program reauthorized in 2005 so that FWP could conserve additional critical habitat.

Stan Meyer

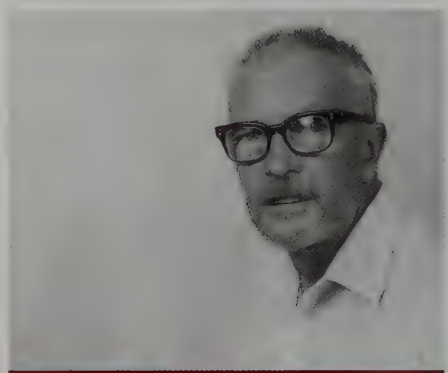
Meyer also embarked on an eight-year odyssey to breath new life into an almost forgotten Indian landmark, Ulm Pishkun, a sacred site near Great Falls. Today, the renamed First Peoples Buffalo Jump State Park is a National Historic Landmark.

★

P.D. SKAAR

1923–1983

Palmer David Skaar, one of the most important contributors to our understanding of Montana birds, arrived in Bozeman from Indiana in 1957 to teach microbial genetics at what was then Montana State College.



P.D. Skaar

However, it was his seminal work on bird distribution across Montana that made him a conservation leader.

Skaar developed a system of monitoring all bird species, in all seasons, year after year. It required birders to document where birds live by using "latilongs," rectangular tracts of land formed by the intersection of latitude and longitude mapping lines. Montana has 49 latilongs.

With information derived from his recording method, he published *Birds of the Bozeman Latilong* in 1969, followed by seven editions of the tome, *Montana Bird Distribution.*

Birds of the Bozeman Latilong was not just a catalog of bird species; it also provided estimates of abundance in preferred habitats

These profiles are shortened versions that Tom Palmer, former chief of the FWP Information Bureau, wrote for the Montana Outdoor Hall of Fame.

and dates of migration. This new approach provided planners and policymakers with a clearer understanding of how land-use development and habitat modifications such as mining, timber sales, and other development affect bird habitat and distribution.

In the 50 years since it was published, many bird species that Skaar described have diminished due to subdivision development in the Gallatin Valley. We know this only because of his meticulous methods of documentation.

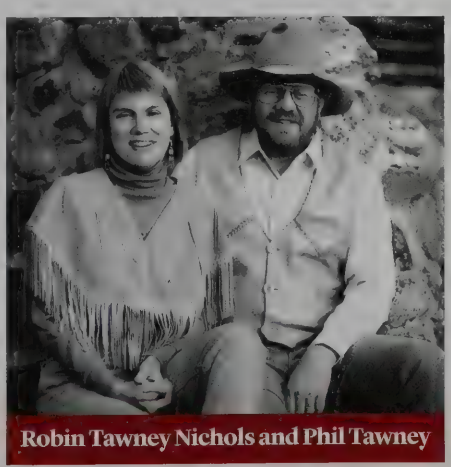
Skaar's birders have tallied more than 1 million individual records since 1975. His system is still used today in the Montana Natural Heritage Program's database. The information from *Montana Bird Distribution* is used by government agencies, NGOs, and private consultants.

★

PHIL TAWNEY
1949–1994
ROBIN TAWNEY NICHOLS
1949–

As University of Montana students, Phil Tawney and Robin Tawney Nichols arrived in Helena to work as interns at the 1971 Montana legislative session. They returned two winters later, as up-and-coming activists, this time recruited by Don Aldrich (MOHOF 2014 inductee), executive secretary of the Montana Wildlife Federation and until then the state's lone conservation lobbyist.

Calling themselves the Environmental Lobby, the trio buttonholed Montana state legislators by day and burned up the phones at night, rallying citizens to contact their lawmakers about pending legislation.


Robin Tawney Nichols and Phil Tawney

That experience led the Tawneys and others to create, in 1973, the Montana Environmental Information Center, an environmental watchdog nonprofit. From 1971 to 1975, the Tawneys were part of crafting or reforming laws aimed at protecting Montana's air and water quality, requiring mine reclamation, detailing environmental standards for energy production and subdivision development, and controlling instream flows.

In the 1980s, now with a UM law degree, Phil played a vital role in the early success of the Rocky Mountain Elk Foundation, as its first legal counsel. His work lives on in the hundreds of thousands of acres of wildlife habitat conserved by the RMEF.

Phil also worked with landowner and fly fisherman Otto "Moose" Teller to secure more than 1,200 acres of Bitterroot floodplain and agricultural lands under a perpetual conservation easement known today as the Teller Wildlife Refuge.

Meanwhile, Robin wrote magazine articles about Montana's complex conservation issues and published her first children's guide—to Yellowstone National Park. Since Phil's death from leukemia in 1994, she has written family-oriented nature guides as well as stories of Montana's early environmental history.

★

GAIL SMALL
1956–

Gail Small, assistant professor of Native American Studies at Montana State University, has spent more than 30 years working to strengthen tribal sovereignty and environmental protection in Indian Country.

Raised in a family of 10 children on southeastern Montana's Northern Cheyenne Indian Reservation, Small witnessed firsthand the "coal wars" that began in the 1960s.

At an early age, Small was aware of the tribe's resistance to Bureau of Indian Affairs' efforts to coerce Cheyenne leaders to agree to terms with strip-mining companies. People outside the tribe looked unkindly at the resistance. Small recalled in 2005 that she "couldn't endure the harassment that we were getting from the non-Indians at school because of our tribe's stand against mining and protecting our land. A lot of us quit high school." She was among them.

Gail Small

Nonetheless, Small earned a degree in sociology from the University of Montana in 1978. At 21, she was back home, the youngest member of a tribal negotiating committee—and the only college graduate—working to cancel the coal leases.

It took 15 years, but the courts ruled in favor of the Cheyenne. This marked the first time the federal government barred multinational corporations from Indian Country.

The victory gave Small hope. She enrolled in the University of Oregon School of Law and earned her Juris Doctorate in 1982. When she returned home in 1984, it was as part of a team of Cheyenne leaders who helped form Native Action, one of the first nonprofit organizations based on an Indian reservation. Native Action aimed to provide information that people could grasp in a manner that would allow them to speak their own voice.

Among Small's many tributes are the Jeannette Rankin Award, the Rockefeller

It took 15 years, but the courts ruled in favor of the Cheyenne. It marked the first time the federal government barred multinationals from Indian Country.

Foundation Next Generation Fellowship, and the Ecotrust Indigenous Leadership Award.

In 2015, Stanford University's Woods Institute for the Environment honored Small as a Leopold Leadership fellow in recognition of Native Action's transformation of Indian law and environmental policy.

The national accolades notwithstanding, Small still holds close to her roots, living on the family ranch near Lame Deer.

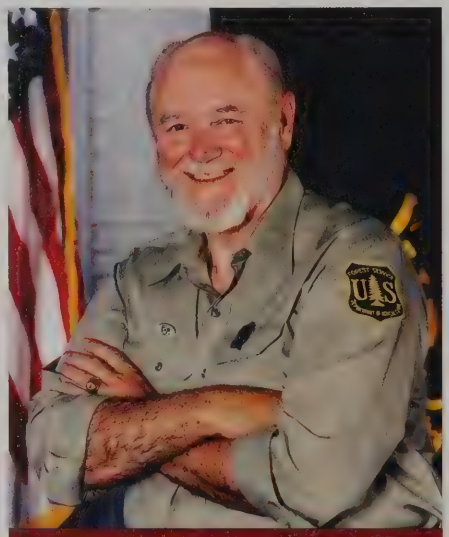
★

JACK WARD THOMAS

1934–2016

Jack Ward Thomas was a child of the Dust Bowl, born in powder-dry Handley, Texas. He never shook the childhood memories of time spent indoors under a table draped with a damp tablecloth to keep the dust at bay.

He left Texas and moved east.



Jack Ward Thomas

After earning his Ph.D. at Amherst College, he led U.S. Forest Service research there, taking breaks in the campus cemetery. Observations from his time in that and other cemeteries inspired Thomas to write "Invite Wildlife to Your Backyard," for *National Wildlife*, one of the most popular articles on wildlife ever written. Reprints run into the millions.

In 1974, he moved to Oregon to be chief research wildlife biologist and program leader at the USFS Forestry and Range Sciences Laboratory. There Thomas studied elk ecology and led a wildlife conservation planning effort that became the intellectual cornerstone of his hallmark achievement: ecosystem management.

In the early 1990s, Thomas became embroiled in the era's white-hot political issue: the conservation of old-growth ecosystems and spotted owl habitat in the Pacific Northwest. With the logging business already in decline, timber industries laid blame for 30,000 lost jobs on the federally protected northern spotted owl. President Bill Clinton tapped Thomas to develop a forest plan focused on old-growth ecosystems.

Two years later, in 1993, President Clinton appointed Thomas the 13th chief of the USFS—and the first whose career centered on wildlife research.

With Thomas at the helm, the USFS adopted the Northwest Forest Plan in 1994. The spotted owl controversy smoldered on, but Thomas never backed away. "We don't just manage land," he said at the time. "We're supposed to be leaders. Conservation leaders...in protecting and improving the lands."

Upon his USFS retirement in 1996, Thomas joined the University of Montana's College of Forestry and Conservation as the Boone and Crockett Professor of Wildlife Conservation. Beloved by his students, he held the position for 10 years.

For Thomas, ecosystem management was the big picture. "We need to be prepared to move into the 21st century," he'd tell his colleagues, "or we'll be left in the dust."

★

LEONARD "LEN" SARGENT

1912–1997

MERRIAM "SANDY" SARGENT

1921–1997

Len and Sandy Sargent moved to Montana from the East in 1969 after purchasing a ranch in Cinnabar Basin, just north of Yellowstone National Park. From the start, they were ardent advocates for the natural environment around them.

Sandy and Len Sargent

They joined the seven-year battle to prevent the federal government from building a dam on the Yellowstone River at Allenspur. They were fierce promoters of wilderness areas in Absaroka-Beartooth country. They donated to the early wave of grassroots environmental and conservation groups—including the Northern Plains Resource Council, the Montana Environmental Information Center, the Greater Yellowstone Coalition, and the Rocky Mountain Elk Foundation—that were dedicated to protecting the wild places of the Greater Yellowstone Ecosystem and beyond.

Their experiences led the Sargents to develop a model to ensure more extensive and systematic future funding for emerging conservation groups and issues. They established the Cinnabar Foundation in the 1980s, and later endowed it with 80 percent of their estate. Since then, the foundation has awarded nearly $8 million to more than 1,860 successful grant applicants.

Len and Sandy's son, the late Rick Hubbard Sargent, and his wife, Judi Stauffer, established the Len and Sandy Sargent Environmental Activism & Advocacy Fellowship Award at the University of Montana Environmental Studies Program.

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To nominate someone—living or deceased—for the next class of inductees, and to read biographies of past inductees, visit the Montana's Outdoors Legacy Foundation website at mtoutdoorlegacy.org.

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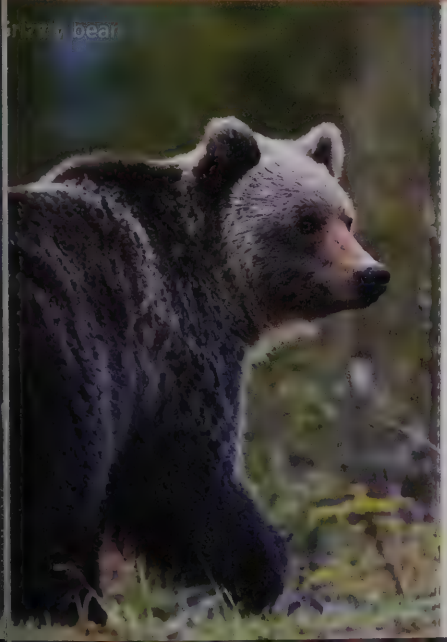

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The AMAZING SPIDER SILK

FROM CATCHING INSECTS TO INSPIRING REVOLUTIONARY MEDICAL DEVICES, THIS REMARKABLE MATERIAL IS WORTHY OF A SUPERHERO. BY ELLEN HOROWITZ

In the Spiderman comic books and movies, Peter Parker possesses a genius intellect, superhuman strength, and the ability to clamber up walls like, well, a spider. But his trademark skill is the ability to fire streams of "web fluid" from mechanical devices on his wrists. The strands allow him to swing through downtown skyscrapers, stop missiles, and bind up villains. Spiderman's "silk" is amazing.

The real thing is even more so.

Spider silk is the world's strongest known natural material. Ounce for ounce, it's up to five times stronger than steel or Kevlar. It can stretch as much as 40 percent beyond its original length and spring back to its former size and shape. It also withstands freezing temperatures without becoming brittle.

Once I began looking for it, spider silk seemed to be everywhere. Along forest trails and in tall grass beside creeks, I stopped to admire the wagon wheel–shaped webs adorned with dew drops and backlit by morning sun. Looking up, I saw streaks of gossamer sailing away on the gentlest breeze. Chickadees, nuthatches, and brown creepers probing their bills beneath scaly bark or furrowed tree trunks alerted me to the presence of the spiders' silken egg cases.

Unlike the Marvel Comics superhero, real spiders release silk from microscopic spigots on the spinneret organs on their abdomen. The silk begins as a liquid protein that hardens into a thread as it is stretched. The output from several spigots is interwoven to make a single silk thread.

Spiders' eight legs are tipped with tiny claws used to manipulate the threads to build webs for capturing prey and to weave protective blankets around their eggs. Spiders also use their silk to build shelters and to make sticky balls they fling to catch prey. Like tiny explorers, spiderlings release silk to hop a ride on the wind in a process called ballooning.

Spiders make different types of silk threads that vary in thickness, strength, and stickiness. Dragline silk—the strongest—is the classic

SILK SPIGOTS Near right: An electron micrograph shows a spider's front spinneret. The large spigot near the top produces the silk dragline. Smaller spigots produce short, sticky threads that make a strong attachment point for other silk lines. Far right: A young spiderling "balloons" in the breeze.

CLOCKWISE FROM TOP: PHOTO ILLUSTRATION BY LUKE DURAN; SHUTTERSTOCK; JUDY THOMPSON, AUSTRALIAN MUSEUM

thread seen when a spider "drops in" out of thin air. Like a mountain climber, the spider uses the thread as a safety line so it can backtrack to safety if trouble appears. Over the years, old draglines become covered in dust and appear as cobwebs in corners and along ceilings. The word "cobweb" comes from the Old English word *coppe*, meaning "spider."

Nonsticky threads form the outer rim and spokes of an orb web, the type made by most garden spiders. In the spiraling portion of the web, where a fly or other insect might get caught, spiders employ their stickiest silk, which contains minute beadlike drops of glue. A freshly caught fly or other meal might then be sealed in another type of silk. A spider uses an entirely different type of thread to form a cocoon around its eggs. Some web-weaving spiders create ultraviolet-reflective silk adornments known as stabilimenta that serve as warning signs to prevent birds from flying through and destroying the carefully wrought webs.

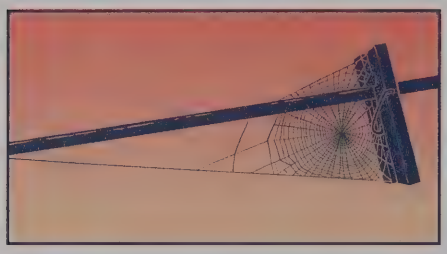
Spiders aren't the only creatures that use their silk. Hummingbirds, kinglets, vireos, American redstarts, dusky flycatchers, goldfinches, and brown creepers are among the small Montana birds that combine silk with mosses, lichens, and other soft plant material to build nests.

Hummingbirds fasten their nests to the upper surfaces of branches, twigs, or pinecones with silk. Incorporated into the main body of the nest, silk gives the structure a spandexlike elasticity that stretches to accommodate growing chicks. Silk is also used to attach lichens and other items to the nest's exterior for camouflage.

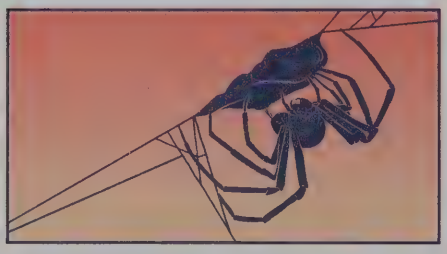
You might think that sticky silk would work best for nest building. But like sticky tape, it is messy to work with and difficult to reposition. What's more, sticky silk quickly loses its adhesive properties as it gathers atmospheric dust. Mike Hansell, author of *Bird Nests and Construction Behavior*, found that birds instead use dry silk collected from sheet webs, cobwebs, funnel webs, and egg cocoons because it's abundant and easy to manipulate. Even though dry silk isn't

Longtime Montana Outdoors *contributor Ellen Horowitz lives in Columbia Falls.*

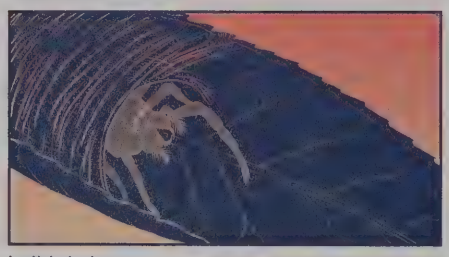
SPIDERS USE SILK TO:



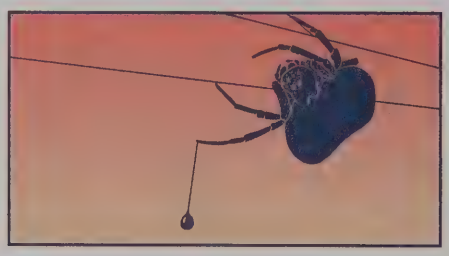
build webs to trap prey;



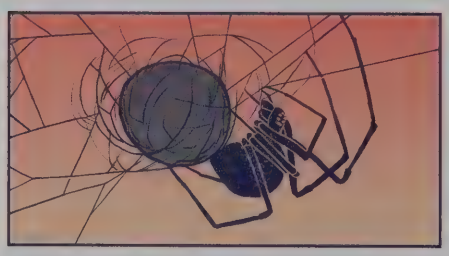
wrap up prey so it can't escape;



build shelters;



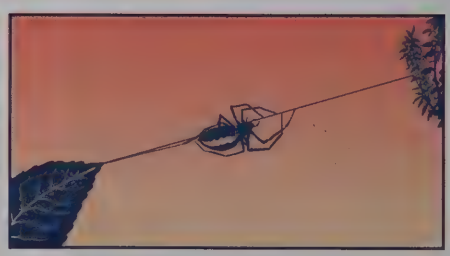
make sticky balls to catch prey;



construct containers for eggs;

LOVELY LATTICE In addition to being practical tools for capturing insects, spider webs are beautiful additions to the natural world.

send out balloon lines to float in the wind; and



make lines for anchoring and traveling.

SPIDER ILLUSTRATIONS BY TAINA LITWAK; SPIDER WEB PHOTO: SHUTTERSTOCK

MORE ROOM Hummingbirds combine silk with soft plant material such as mosses for nest building. The stretchy silk material expands to accommodate growing chicks.

coated with a sticky adhesive, microscopic loops within the fiber readily attach to minuscule, naturally occurring hooks found on mosses, lichens, leaves, and similar items used to build small nests. For birds, dry silk works like Velcro and can be repositioned with relative ease.

For thousands of years, humans have used spider silk. In ancient Greece, people applied cobwebs to wounds to stop bleeding. Australian Aborigines created fishing line from silk, and New Guinea natives wove fishing nets from the material. (The silk that for millennia has been spun into thread for fine cloth—and in the early 20th century as fly-fishing line—comes from cultivated silkworms, not spiders.)

Spider silk was also an important component in a variety of optical devices. In the early 1900s strands were built into levels, microscopes, surveyor transits, and telescopes as sighting marks. In the late 1930s, optics manufacturers began employing dragline silk from black widows and other orb-weaving spiders for the fine optical crosshairs of scopes later used on WWII rifles.

Recent uses of silk span a much broader range of applications, as scientists grow to better understand its molecular structure and how spiders make the material. In the emerging field of biomimicry, design and product engineers study natural processes and materials such as spider silk to create ecologically sustainable products and systems. Spiders have perfected their natural silk making over 380 million years, but production of nylon and other synthetic materials is one of the world's dirtiest industries. Scientists and engineers are finding ways to mimic the properties of spider silk and even create artificial versions that have the same molecular structure, using water, silica, and cellulose rather than toxic chemicals or petroleum products. Potential medical uses include artificial ligaments and tendons as well as sutures for microsurgery.

Some scientists have even genetically modified goats using genes from spiders, hoping to extract large amounts of silk material from the milk. Industrial applications might include wear-resistant shoes, bio-based glues, biodegradable fishing line, tear-resistant paper, lightweight parachute lines, and bulletproof vests.

Glass engineers who study spider silk stabilimenta (the UV-reflective adornments) have helped window manufacturers make insulated glass that reduces bird collisions. By some estimates, as many as 600 million birds die in window collisions in the United States and Canada every year. The new glass contains an ultraviolet-reflective surface visible to birds but imperceptible to humans.

In the comic book world, synthetic spider silk helps a superhero fight evil-doers and protect the world from destruction. Turns out, real spider silk also has the potential to improve and even save lives. Amazing.

OTHER SILK SPINNERS

Spider silk begins as liquid protein in glands within a spider's abdomen and travels via narrow ductlike structures until it's squeezed through one of the spinnerets located at the spider's hind end. By the time the liquid exits the spider's body, it has morphed into a nearly waterproof thread. This process is completely different from that of insects such as silkworms, which make only one type of silk produced from their salivary glands.

The most common natural use of insect silk is pupation. Moth caterpillars are best known for their silk cocoons, but the quantity and quality of the silk varies. Giant silkworms used in commercial silk-making produce nearly 1,000 feet of silk from a single cocoon. Montana's two giant silk moths—the Columbia silkmoth and Polyphemus moth—are not used commercially.

The aquatic larvae of caddis flies produce silk for making shelters and obtaining food. Many of them build mobile homes by gluing tiny pebbles, grains of sand, or bits of vegetation together with silk. Other species of caddis forego a protective structure and instead spin silken nets for capturing prey or use silk as safety lines for swift currents. The aquatic larvae of black flies spin silk to anchor themselves to rocks in fast-moving water.

Above: A silkworm and cocoons. Below: A hydropsyche caddis fly "filter feeds" by building an underwater silk net.

TOP TO BOTTOM MIKE'S BIRDS; SHUTTERSTOCK; STEVE ORMEROD

Indispensable

BY TOM DICKSON

Last year Montana Fish, Wildlife & Parks produced a series of posters featuring key department positions. One that shows an administrative assistant on the phone reads, "My job description: know everything."

It's an exaggeration. But just barely.

Montana FWP is filled with unsung employees who do great work but rarely get recognized by the public. Among them are the administrative assistants and office managers employed at FWP's headquarters in Helena and regional and area offices across the state.

"Administrative assistant" hardly conveys the vast knowledge and expertise these women and men bring to their jobs each day. Many come to FWP with years of experience in marketing, sales, and customer service, or in running a ranch or small business. Some have college or technical school degrees. All are indispensable, the behind-the-scene gears essential for FWP to successfully do its work.

Administrative staff are human databases. They know—or can quickly find—information about hunting, fishing, and trapping seasons, dates, limits, and district boundaries, not to mention knowledge of every FWP program. They can answer questions about aquatic invasive species, wildlife diseases, fishing access sites, boating and snowmobiling regulations, camping opportunities, state parks, and off-highway vehicle use. They can explain the difference between resident and nonresident licenses, and how special permits and lottery drawings work.

When homeowners call FWP for advice on dealing with nuisance wildlife—skunks, bats, snakes, raccoons, and the like—it's usually an administrative assistant or office manager who helps them out.

In addition to being walking Wikipedias for all things FWP, administrative staff help register furbearers, mountain lions, and black bears that hunters and trappers bring in to the office. One day they might have to crawl underneath a boat parked outside and look for zebra mussels, and the next day carry severed deer heads submitted for chronic wasting disease sampling.

As part of the FWP team, administrative staff serve on committees covering internal communications, department safety, grizzly bear management, and the agency's long-term vision. They assist with FWP hunter education workshops and fishing clinics, and support Block Management teams.

Administrative assistants and office managers unlock the doors and turn on the lights every workday at 8 a.m. (many show up much earlier), then shut down the building at 5 p.m. When FWP offices are open, they are always there. Though not literally chained to their desks, administrative staff—especially those working the front desks—can't always come and go as they please. Sometimes even a simple bathroom break requires scheduling a backup.

In the office, they help manage contracts to ensure that heating and cooling systems work, bathrooms stay clean, security cameras and alarms function, copiers copy, and credit card machines operate. Their working knowledge of computer software, programs, and systems and pretty much anything else electronic is remarkable. When something doesn't work—a beeping smoke alarm, a dead telephone line, a blank computer screen—everyone turns to the office staff and yells, "Help!"

They see to it that sidewalks are shoveled, parking lots are plowed, and lawns are mowed. They maintain office supplies and equipment. They assist with budgeting, permitting, and environmental assessment paperwork, and help administer the use of FWP vehicles. They help set up public meetings, then record and transcribe comments. When there's a video or telephone conference, it's an administrative assistant or office manager who likely sets up the computers, microphones, and cameras.

While at FWP headquarters in Helena recently, I listened in as one front desk worker explained to a frustrated hunter how the elk shoulder seasons work. His tense body language gradually relaxed as she patiently and clearly explained the complexities and details of late-season hunts. She then gave him names and phone numbers to call for more information.

"Anything else I can help you with?" she asked as he gathered up an armful of maps, regulations, and brochures.

"No thanks," he replied. "You've been real helpful. I always find what I need when I come in here."

Then, as he headed for the door, he turned and said, "I just love you guys."

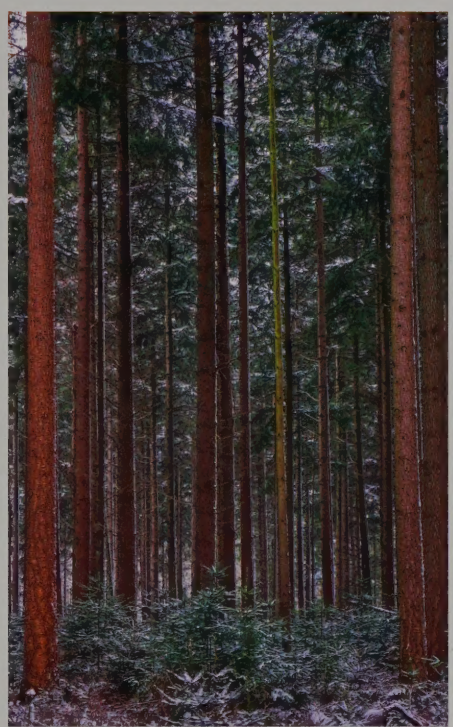
Tom Dickson is editor of Montana Outdoors.

ILLUSTRATION BY STAN FELLOWS

Douglas fir

Pseudotsuga menziesii By Ellen Horowitz

We followed a game trail to a wind-blasted ridge on the Rocky Mountain Front. At 7,200 feet, most of the plants on this rocky, exposed landscape hugged the ground, except a few bonsai-like conifers growing in small, scattered clumps. As my husband and I passed the gnarly trees, one caught my attention. Instead of displaying the clustered needles characteristic of pines, the twisted branches held individual needles and the unmistakable cones of Douglas fir. On the west side of the mountains where I live, this tree grows tall, straight, and at much lower elevations. That weather-beaten, dwarfed form of the tree—known as "krummholz," German for "twisted wood"—reminded me that the Douglas fir has perplexed and surprised people ever since its discovery.



INNUMERABLE NAMES

When the tree was first documented in 1792, early botanists couldn't agree if it was a pine, spruce, hemlock, fir, or something else altogether. Classifying it proved a botanical nightmare. By the 1860s, after numerous attempts, a group of botanists bestowed the scientific name, *Pseudotsuga douglasii*. "Pseudotsuga" means "false hemlock," and "douglasii" honors David Douglas, a Scottish botanist who collected tree and cone samples in the 1820s and sent them to the Royal Botanical Gardens in London for cultivation.

Lumbermen and foresters were much less concerned about proper nomenclature. They used the names Douglas pine, Douglas spruce, Douglas fir, Oregon pine, red pine, and red fir interchangeably. In 1950, the scientific name officially changed to *Pseudotsuga menziesii*. The word "menziesii" honors Scottish physician and naturalist Archibald Menzies, who first recorded the tree on Vancouver Island in 1791. Today, almost everyone calls it Douglas fir or Doug fir. For years, the name was hyphenated to indicate that it is not a true fir (such as a subalpine fir or grand fir), but most organizations and agencies no longer use the hyphen.

Columbia Falls writer Ellen Horowitz is a longtime Montana Outdoors *contributor.*

GEOGRAPHICAL RANGE

Douglas firs span a vast array of habitats and elevations, ranging from temperate rainforests on the Pacific Northwest coast to 8,000- to 10,000-foot elevations in the Colorado Rockies. With such wide habitat extremes, it's no surprise that Douglas firs are differentiated into two varieties: coastal and Rocky Mountain.

In Montana, the Douglas fir is found in the state's western two-thirds. Montana's champion Douglas fir, in Sanders County, measures 178 feet tall and sports a 223-inch circumference. The world-record Douglas fir, which grows in a remote area of western Oregon, is 327 feet tall.

IDENTIFICATION

One of the key features of a Douglas fir are its woody cones with three-pronged bracts, often described as resembling the hind legs and tail of a mouse. When cones aren't present, the tree's sharply pointed reddish-brown buds with overlapping scales distinguish it from true firs, which grow round, waxy buds. Older Doug firs develop a thick, corky gray bark with reddish-brown furrows. Soft, flat, single needles spiral around the branches and taper at the tip.

Despite the Douglas fir's easy-to-recognize woody cones, most people never notice the newly emerging cones, which are as bright pink and exotic-looking as tropical flowers. They start appearing in early May near my Flathead Valley home but show up later on trees at higher elevations. As cones develop, the young ones appear in various shades of pale pink and mint green. By summer's end, they mature and appear brown and woody.

USES

A lumber mainstay for the timber industry, the Douglas fir is often cited as one of the world's most valuable trees. It's also used for firewood and grown as Christmas trees.

Wildlife use Douglas firs for shade in summer, for shelter from winter winds and snow, and as places to nest. Dusky (blue) grouse eat the needles in winter. Seeds provide food for crossbills and other birds as well as mice and chipmunks. Bears eat the inner bark (cambium).

Some people gather the tree's tender, new pale-green needles in springtime and use them to flavor sorbet, ice cream, and even a type of brandy known as eau-de-vie.

SHUTTERSTOCK

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KEVIN PODRUZNY ★ STATISTICIAN ★ HELENA

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